

FIG. 1
(Prior Art)

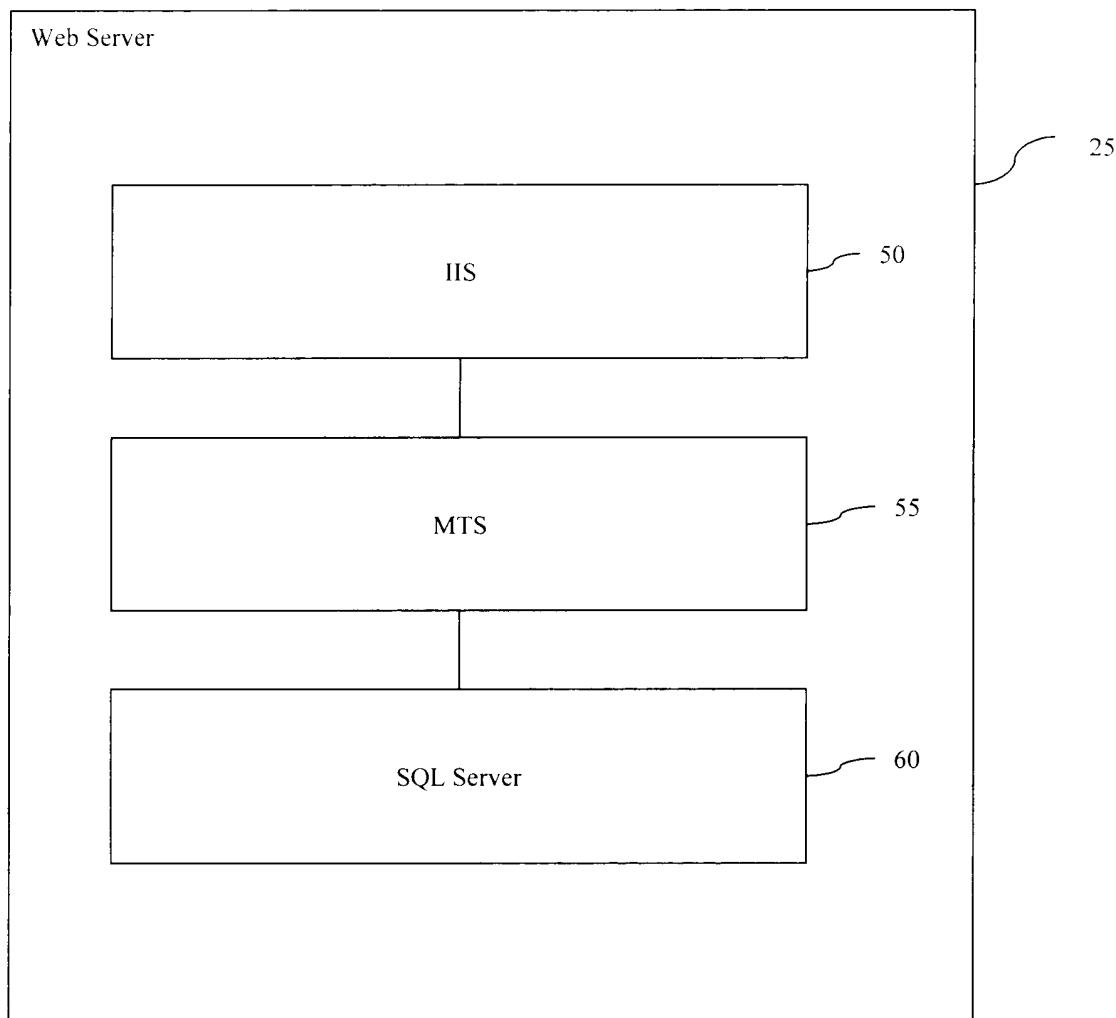


FIG.2
(Prior Art)

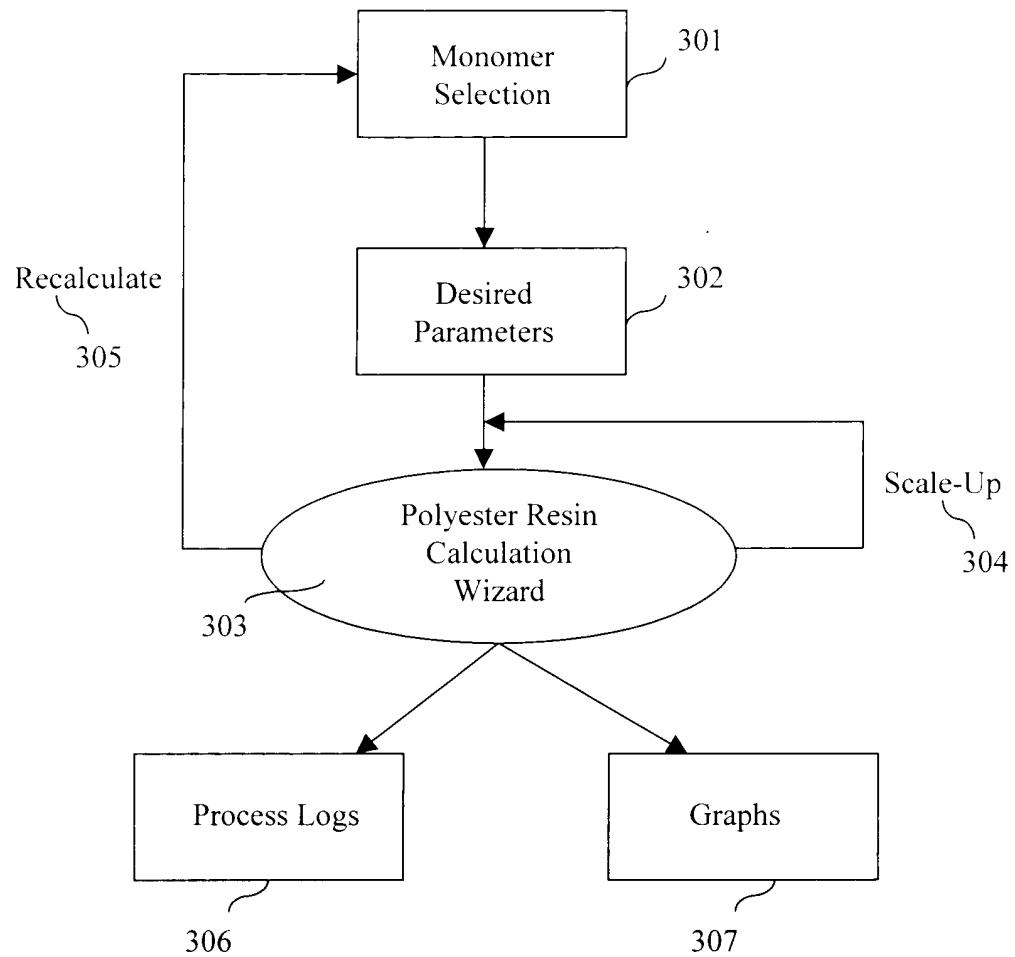


FIGURE 3A

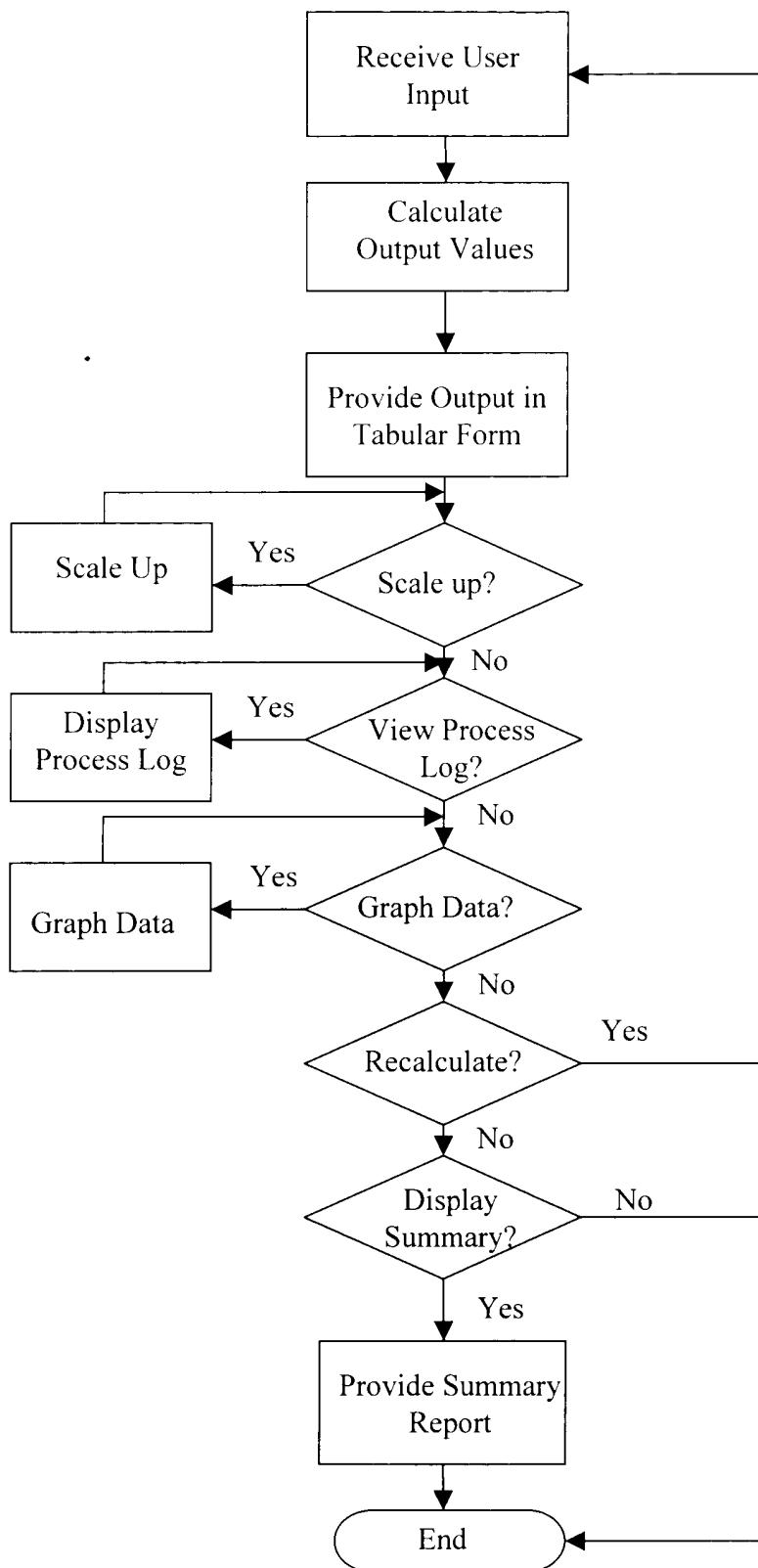


FIGURE 3B

Polyester Resin Calculation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Contact Us [391](#) How To Use The Wizard [312](#) Close Window [393](#)

Monomer Selection

* = Required Field

Designated Resin Name: [310](#)

Monomer Selection: * [314](#)

Click here to Add Unlisted Monomer [314](#)

1,2-epoxypropane [390](#)
 1,2-Propylene Glycol [352](#)
 1,3-Butanediol [354](#)
 1,3-Cyclohexanedicarboxylic Acid
 1,4-Butanediol

HELP? [390](#)

Excess: [352](#)

Hydroxyl [354](#)
 Acid

Add Selected Monomers to the table below [316](#)

Name 330	Molecular Weight 332	Acid Groups 334	Hydroxyl Groups 336	Condensate from the Acid 338	Condensate from the Hydroxyl 340	Weight Fraction Monomer in Resin 346	Weight Fraction Molety In Monomer 348	Raw Material Cost 350
1,6-Hexanediol	118.16	0	2	0	9	0.847676	0	Delete 320A
2,6-								Delete 320B
Naphthalenedicarboxylic Acid	216.11	2	0	9	0	0.916709	0	Delete 320B

[Clear all Monomer Selected](#) [356](#)

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FIGURE 3C

Polyester Resin Calculation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Polyester Resin Calculation

EASTMAN

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***=Required Field**

Add New Monomer

Monomer Name: *

Molecular Weight : * 390

Acid Groups : *

Hydroxyl Groups : *

Condensate from the Acid: *

Condensate from the Hydroxyl : *

Weight Fraction Monomer In Resin:

Weight Fraction Molety in Monomer :

Raw Material Cost:

HELP?

330

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[Cancel and Return To Monomer selection screen](#) [Click Here To Add Monomer](#) 342

NOTE: The values entered by the user will not be stored in Eastman Database.

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FIGURE 3D

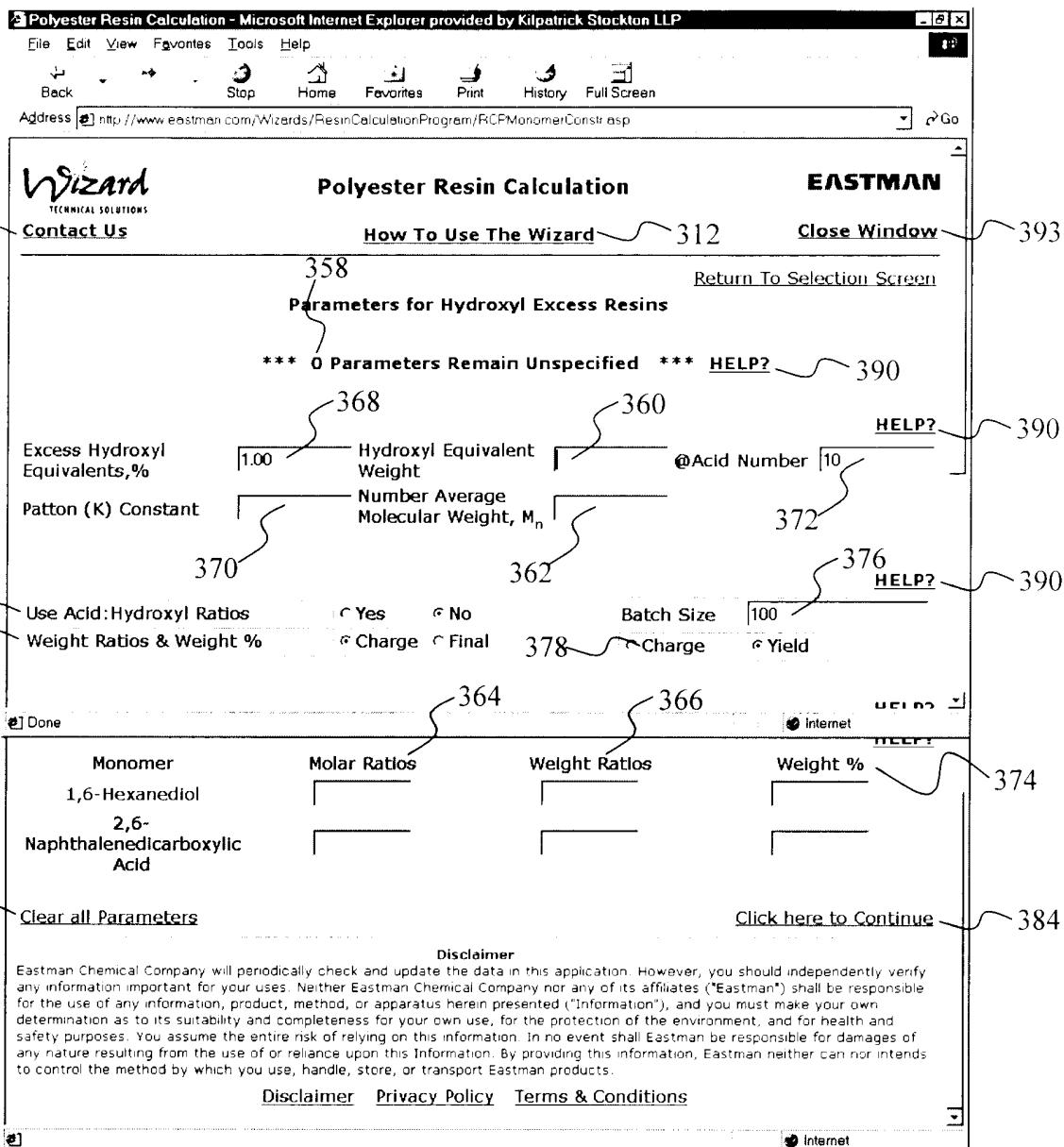


FIGURE 3E

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Address: <http://www.eastman.com/Wizards/ResinCalculationProgram/RCPPolymerProp.asp> Go

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How to download

Results **392**

Monomer Selection Parameters

100 Unit Reactor Yield

	Monomer	Moles	Equivalents	Weight	Weight%	Monomer Units per Resin Chain
1,6-Hexanediol	0.3362	0.672	39.726	35.576	15.90	
2,6-Naphthalenedicarboxylic Acid	0.3329	0.666	71.937	64.424	15.74	

Total Charge 111.663
 Minus Condensate 11.663
 Yield 100.000

Acid Number 10 Hydroxyl Number 14

391 **393**
353 **399**
355 **390**
394 **396** **385**

Done **Internet**

Fraction Acid Reacted 0.9732 **Fraction Hydroxyl Reacted** 0.9636
Acid Equivalent Weight NA **Hydroxyl Equivalent Weight** 4085.0
Acid Functionality 0.84 **Hydroxyl Functionality** 1.16
Excess Acid Equivalents NA **Excess Hydroxyl Equivalents** 1.00

Patton Constant(K) 1.0050 **R(OH/COOH)** 1.0100
Number Average Molecular Weight, M_n 4728 **Gelation(M_n)Occurs @AcidNumber** None
Weight Average Molecular Weight, M_w NA **Gelation(M_w)Occurs @AcidNumber** NA

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Done **Internet**

FIGURE 3F

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Address: <http://www.eastman.com/Wizards/ResinCalculationProgram/RCPolymerProp.asp> Go

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Results 392

<u>Monomer Selection</u>	3000 Unit Reactor Charge					<u>HELP?</u>
<u>Parameters</u>	Monomer	Moles	Equivalents	Weight	Weight%	Monomer Units per Resin Chain
Results	1,6-Hexanediol	9.0326	18.065	1067.292	35.576	15.90
Scale Up	2,6-Naphthalenedicarboxylic Acid	8.9432	17.886	1932.708	64.424	15.74
Process Log	Total Charge					3000.000
Graph Process Data	Minus Condensate					313.350
	Yield					2686.650

[Done](#) [Internet](#)

Acid Number	10	Hydroxyl Number	14
Fraction Acid Reacted	0.9732	Fraction Hydroxyl Reacted	0.9636
Acid Equivalent Weight	NA	Hydroxyl Equivalent Weight	4085.0
Acid Functionality	0.84	Hydroxyl Functionality	1.16
Excess Acid Equivalents	NA	Excess Hydroxyl Equivalents	1.00
Patton Constant(K)	1.0050	R(OH/COOH)	1.0100
Number Average Molecular Weight, M_n	4728	Gelation(M_n)Occurs @AcidNumber	None
Weight Average Molecular Weight, M_w	NA	Gelation(M_w)Occurs @AcidNumber	NA

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FIGURE 3G

3 Polyester Resin Calculation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address: http://www.eastman.com/Wizards/ResinCalculationProgram/RCPolymerprop.asp#section1 Go

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Results 392

Monomer Selection Parameters **3000 Unit Reactor Charge** [HELP?](#)

Monomer	Moles	Equivalents	Weight	Weight%	Monomer Units per Resin Chain
1,6-Hexanediol	9.0326	18.065	1067.292	35.576	15.90
2,6-Naphthalenedicarboxylic Acid	8.9432	17.886	1932.708	64.424	15.74

Total Charge 3000.000
 Minus Condensate 313.350
 Yield 2686.650

396 [Results](#)

385 [Scale Up](#)

381 [Process Log](#)

381 [Graph Process Data](#)

Done Internet

Acid Number	10	Hydroxyl Number	14
Fraction Acid Reacted	0.9732	Fraction Hydroxyl Reacted	0.9636
Acid Equivalent Weight	NA	Hydroxyl Equivalent Weight	4085.0
Acid Functionality	0.84	Hydroxyl Functionality	1.16
Excess Acid Equivalents	NA	Excess Hydroxyl Equivalents	1.00

Patton Constant(K)	1.0050	R(OH/COOH)	1.0100
Number Average Molecular Weight, M_n	4728	Gelation(M_n)Occurs @AcidNumber	None
Weight Average Molecular Weight, M_w	NA	Gelation(M_w)Occurs @AcidNumber	NA

Process Log Information 398

Acid Number	Hydroxyl Number	Fraction Reacted	Fraction Reacted	Average Molecular Weight, M	Weight	Average Molecular Weight	Condensate Weight
100.0	103.6	0.7243	0.7171	551	921	233.194	
95.0	98.6	0.7385	0.7312	580	978	237.771	
90.0	93.6	0.7527	0.7452	611	1041	242.334	

Done Internet

FIGURE 3H

Graph Process Data - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address: http://www.eastman.com/Wizards/ResinCalculationProgram/RCPGraphInfo.asp?Excess=True

Go

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Graph Process Data

Select Parameters to Graph

Monomer Selection
Parameters [HELP?](#)
Results
Scale Up
Process Log
Graph Process Data

Enter Acid Number Range
100 0 5
Upper Lower StepSize

One X coordinate and two Y coordinates may be selected.

387 [Parameters](#) [X-Axis](#) [Y-Axis](#)

Done Internet

Acid Number
Hydroxyl Number
Fraction Acid Reacted
Fraction Hydroxyl Reacted
Number Average MW
Weight Average MW
Condensate

Create Graph 389

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FIGURE 3I

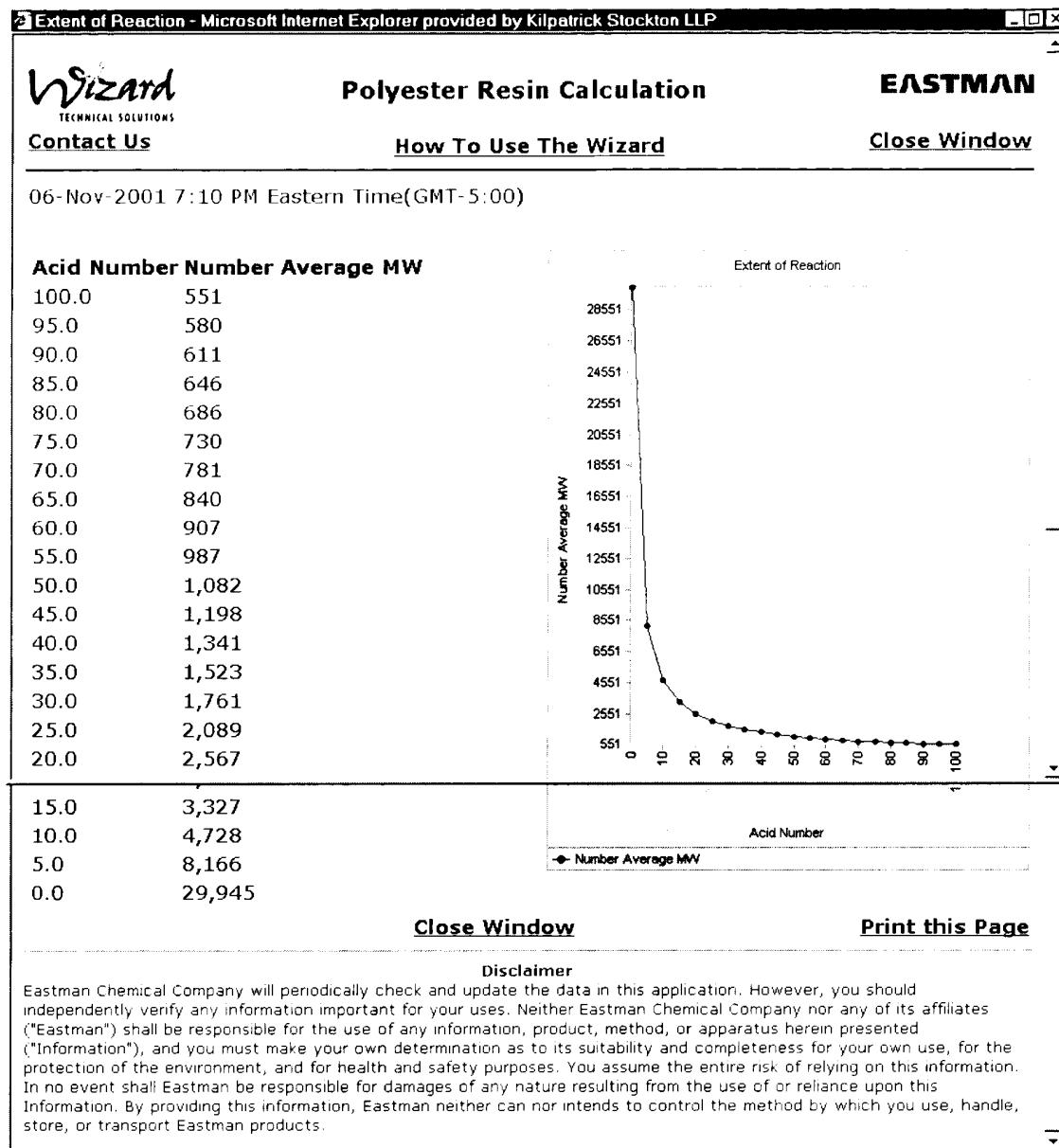


FIGURE 3J

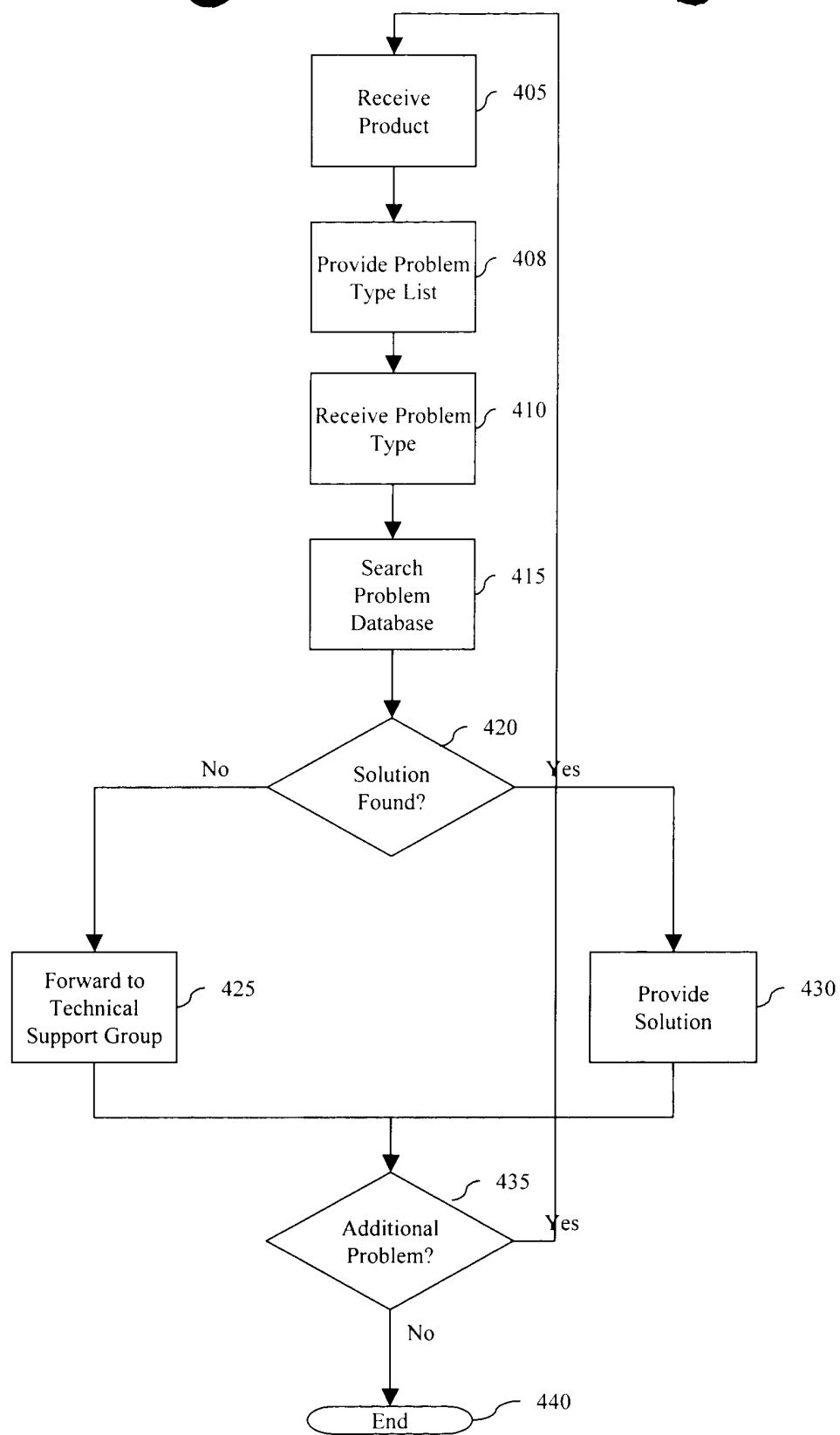


FIG. 4

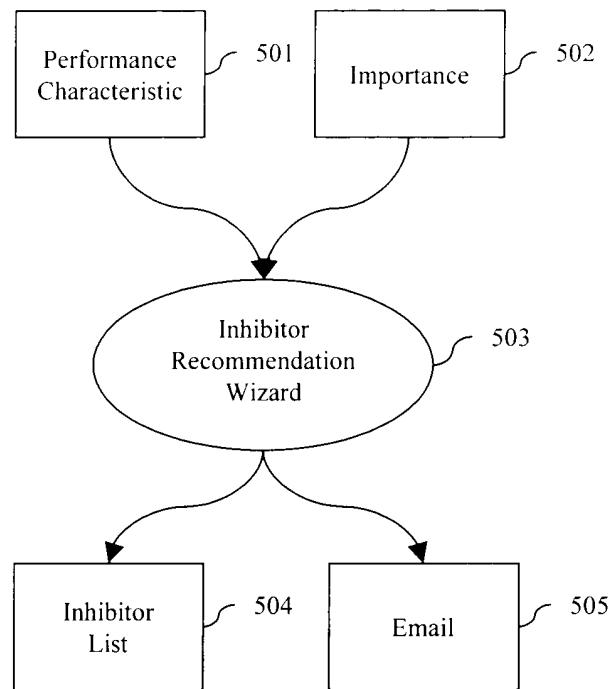


FIG. 5A

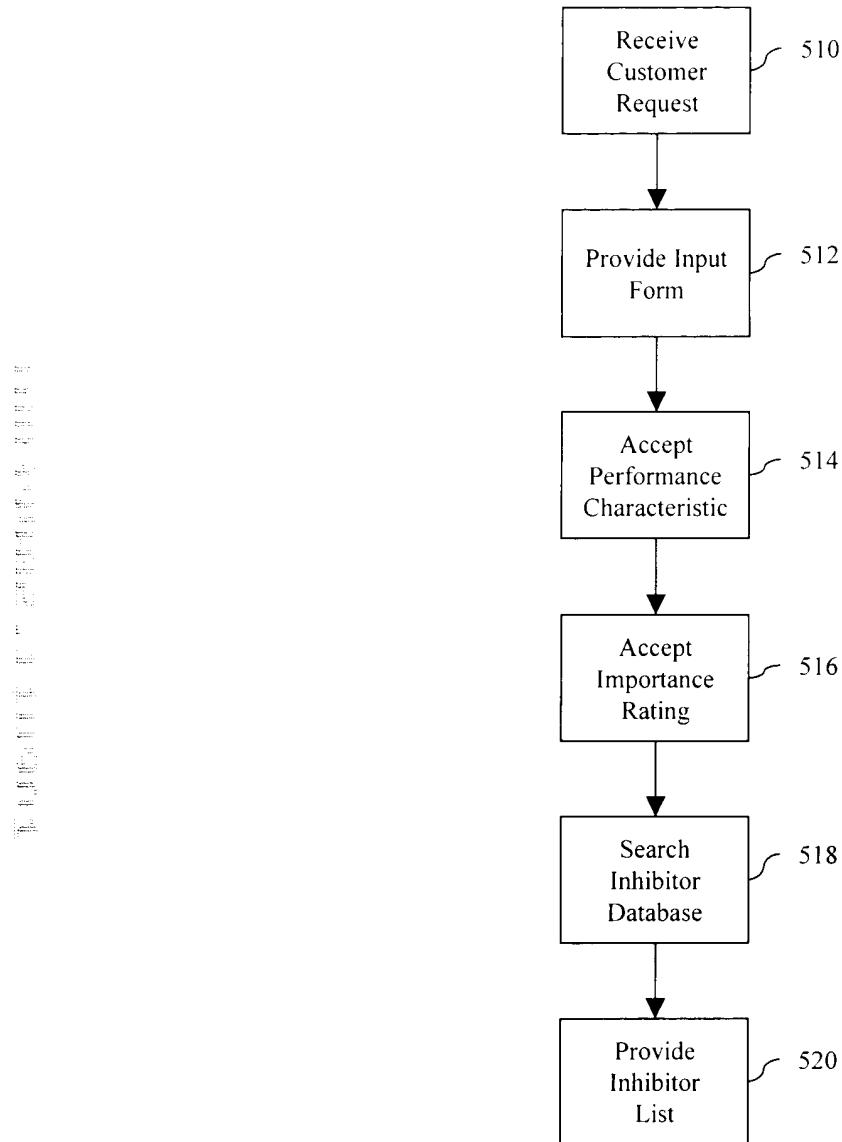


FIG. 5B

Appln. Ser. No. To Be Assigned
SOFTWARE ENABLED WIZARDS
 Inventors: BASSETT et al.
 Express Mail No. EL 834 336 204 US

2 Http://eastmen/wizard2/inhibitor/inhibitor.asp - Microsoft Internet Explorer

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Address: <http://eastmen/wizard2/inhibitor/inhibitor.asp> ↵ Go

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Inhibitor Recommendation EASTMAN

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550

Desired Performance Characteristics and Importance 551

Help ?

Performance Characteristics High Importance Medium Low None Recommended Inhibitors Rating

Performance Characteristics	High	Medium	Low	None	Recommended Inhibitors	Rating
Gel Time Extension	C	C	C	C		
Storage Stability	C	C	C	C		
Low Color	C	C	C	C		
Active without Oxygen	C	C	C	C		
Styrene Solubility	C	C	C	C		
Glycol Solubility	C	C	C	C		
Alcohol Solubility	C	C	C	C		
Ketone Solubility	C	C	C	C		
Low Cost	C	C	C	C		

552

View Recommended Inhibitors Printer Friendly Version

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Done Local Intranet

Start Inbox - Outlook... Project1 - Microsoft Word Microsoft Word Microsoft Excel Microsoft Excel 5:42 PM

FIG. 5C

2 Http://eastmen/wizard2/inhibitor/inhibitor.asp - Microsoft Internet Explorer

3 Http://eastmen/wizard2/inhibitor/inhibitorPrint.asp?firstLoad=No - Microsoft Internet Explorer

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Address: <http://eastmen/wizard2/inhibitor/inhibitor.asp> ↵ Go

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Wizard TECHNICAL SOLUTIONS

Inhibitor Recommendation EASTMAN

Contact Us Close Window Print this page

21-Dec-2000 17:49 Eastern Time(GMT-5:00)

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Desired Performance Characteristics and Importance 556

Performance Characteristics Importance Recommended Inhibitors Rating

Performance Characteristics	Importance	Recommended Inhibitors	Rating
Gel Time Extension	None	Product-1	100%
Storage Stability	None	Product-2	90%
Low Color	None	Product-3	70%
Active without Oxygen	None		
Styrene Solubility	None		
Glycol Solubility	None		
Alcohol Solubility	None		
Ketone Solubility	None		
Low Cost	None		

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Start Inbox - Outlook... Project1 - Microsoft Word Microsoft Word Microsoft Excel Microsoft Excel 5:43 PM

FIG. 5D

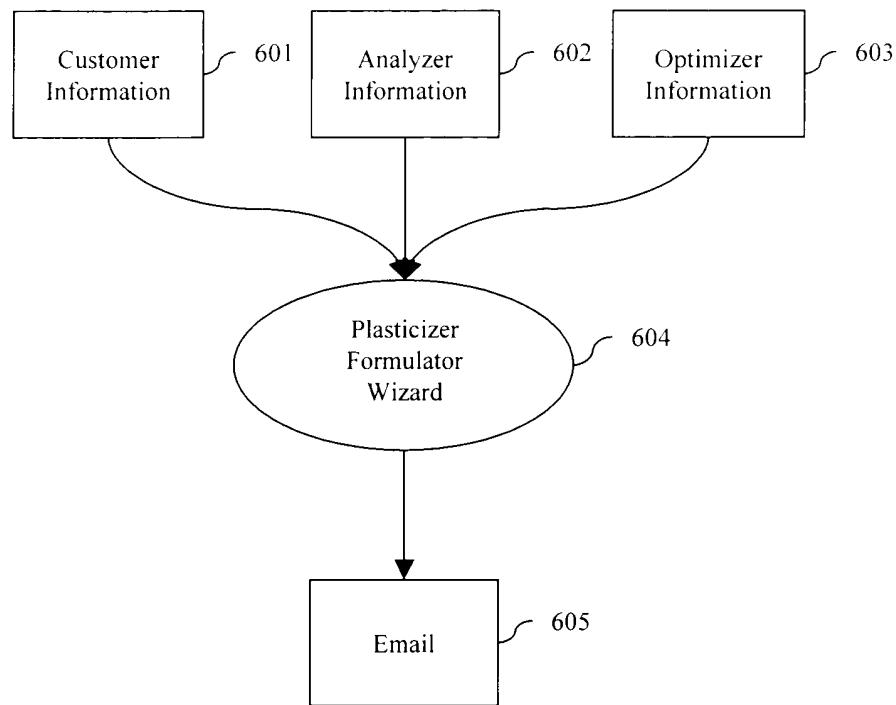


FIG. 6A

PRINTED IN U.S.A. 10-10-00 10:00 AM

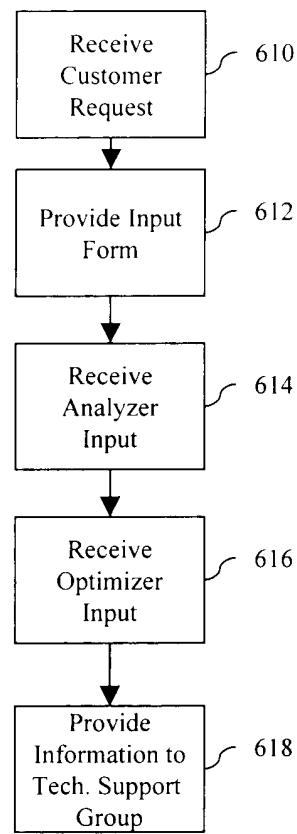


FIG. 6B

Appln. Ser. No. To Be Assigned
SOFTWARE ENABLED WIZARDS
 Inventors: BASSETT et al.
 Express Mail No. EL 834 336 204 US

2 Plasticizer Formulator - Microsoft Internet Explorer

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Address: <http://eastman/wizard2/plasticizer/PlasDetail.asp> ↵ Go

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Wizard
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Plasticizer Formulator **EASTMAN**

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* = Required field

620 ANALYZER 621 622

623 Ingredients (Must INPUT a minimum of one PVC Resin and one Plasticizer)

624 PHR (Parts per Hundred Resin)
 Required field to predict physical properties

625 US Dollar/Pound
 Required field to calculate formulation cost

626

PVC Resin 1*
 PVC Resin 2
 Plasticizer 1*
 Plasticizer 2
 Plasticizer 3
 Plasticizer 4
 Plasticizer 5
 Epoxidized Soybean Oil
 Heat Stabilizer

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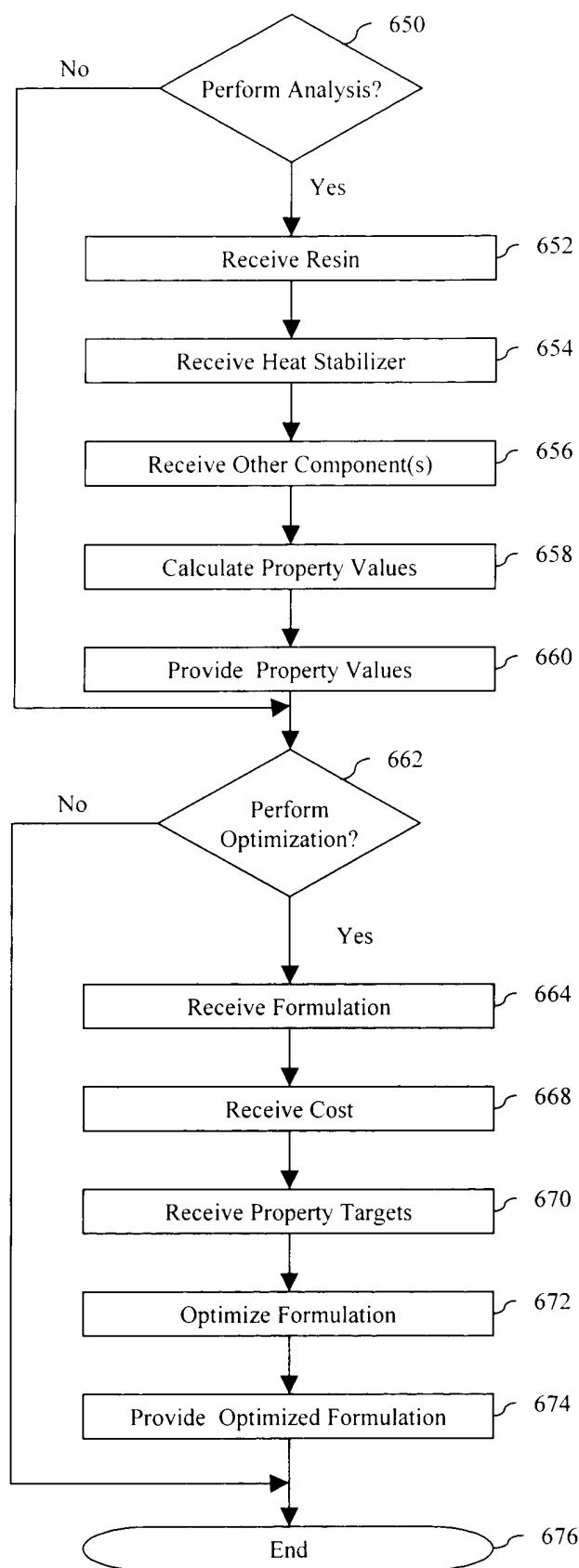


FIG. 6E

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SOFTWARE ENABLED WIZARDS
Inventors: BASSETT et al.
Express Mail No. EL 834 336 204 US

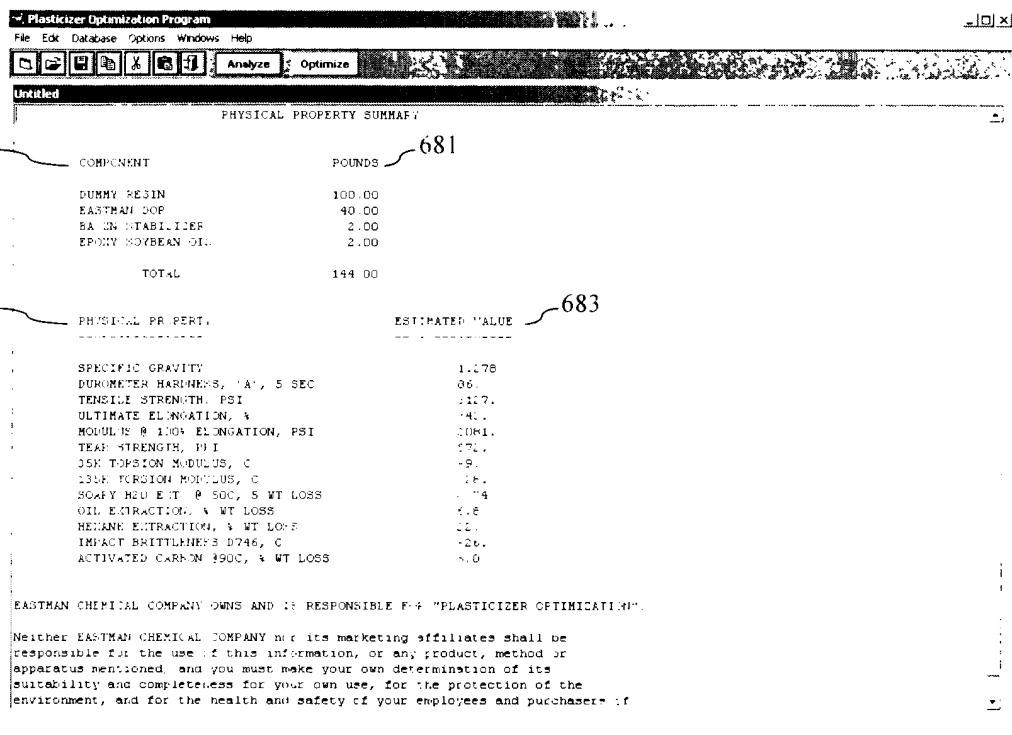


FIG. 6F

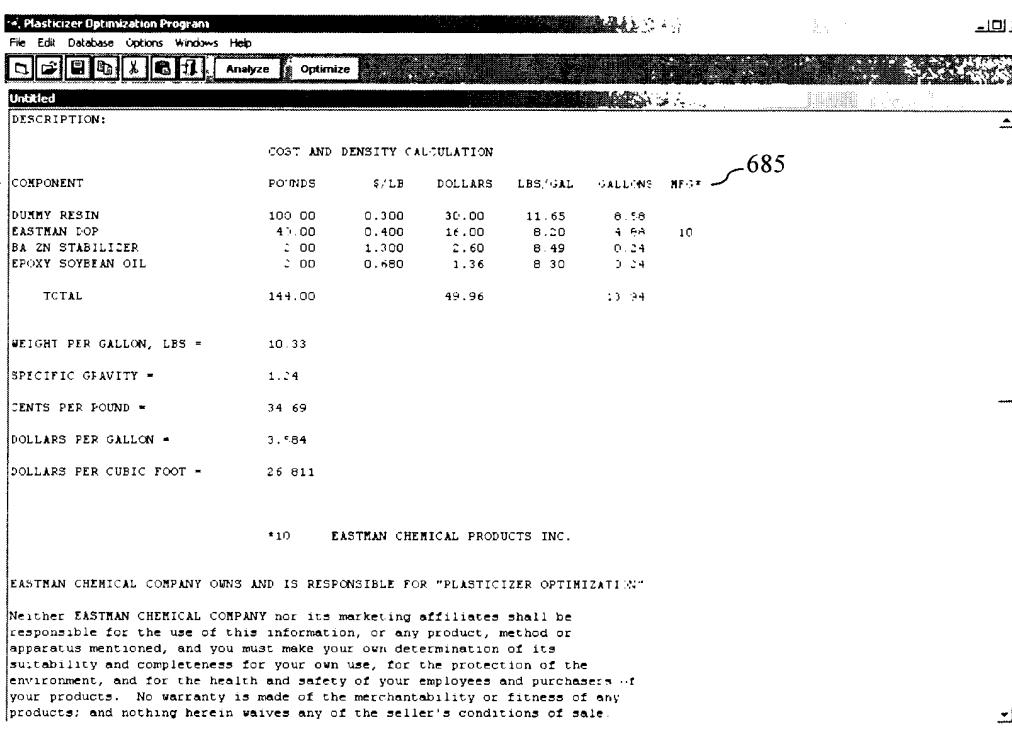


FIG. 6G

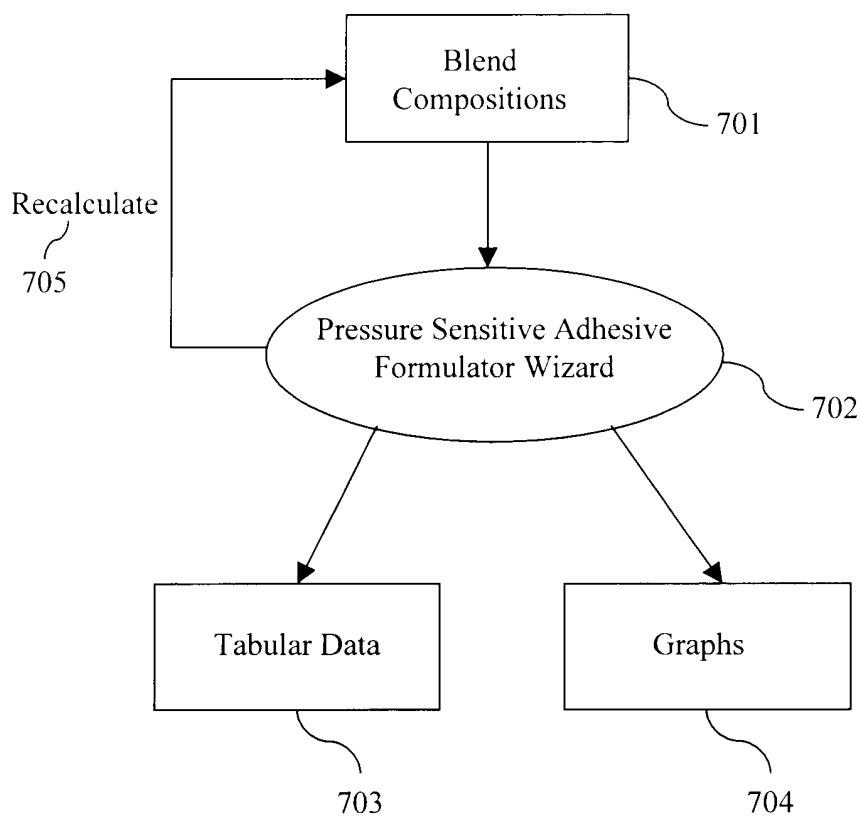


FIGURE 7A

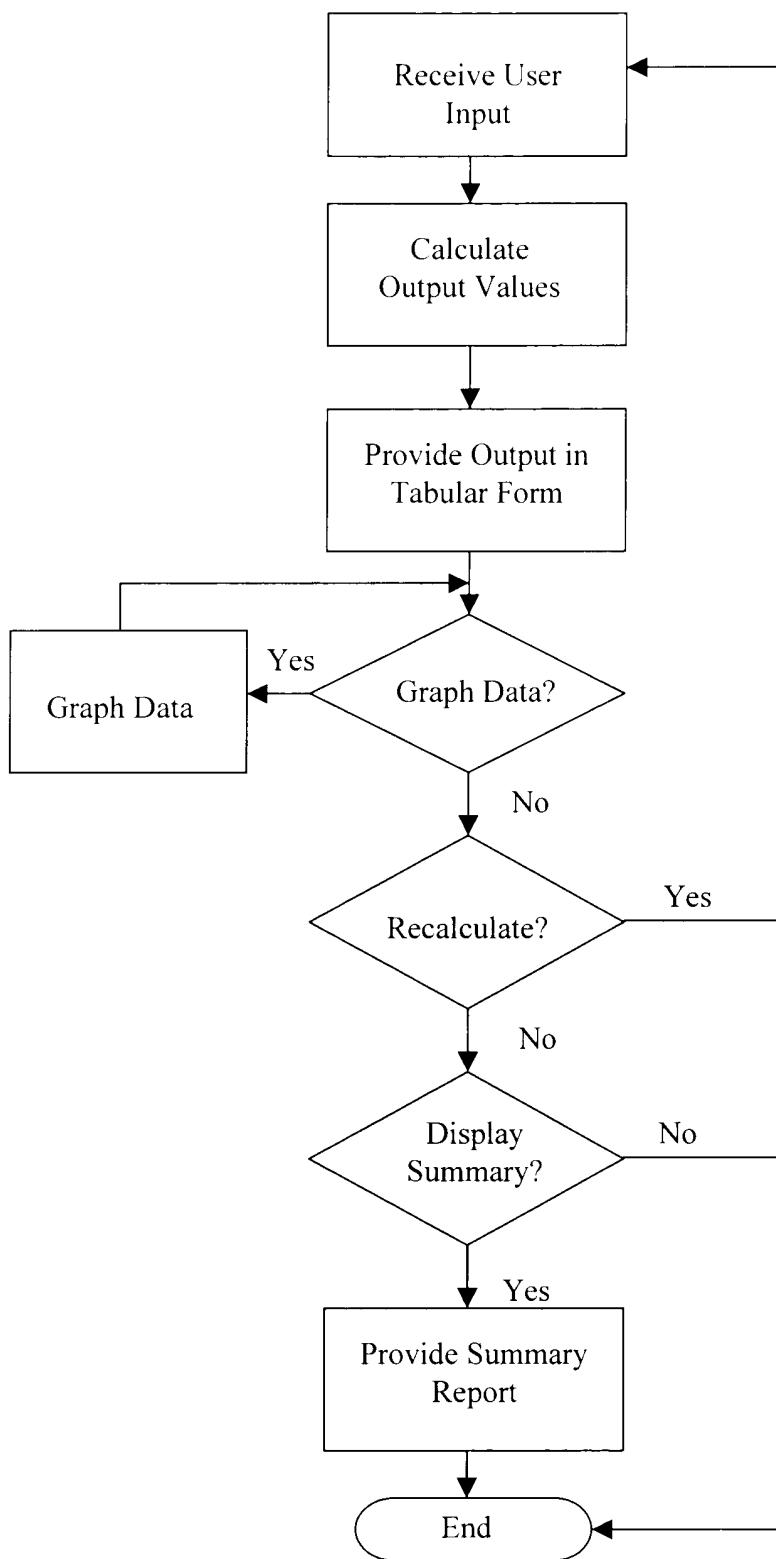


FIGURE 7B

700

Adhesive Formulator - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address: http://www.eastman.com/Wizards/Adhesive/AdhesiveMain.asp Go

Wizard TECHNICAL SOLUTIONS 791

Pressure Sensitive Adhesive Formulator
Incorporating 712
Eastotac Hydrocarbon Resin

Contact Us 793

How To Use The Wizard

*** = Required Field** 774

Click to View Test Methods

Blend Composition

Formulation 720

1

722 Eastotac HL-100R * 724

NOTE: The formulation composition must total to 99.5%

Milled Natural Rubber * %

726 Paraffin Oil * 722

Clear 732

Click to View Model Results

Click to View Properties

Click to add Formulation 730

Clear All added Formulations

Disclaimer 770

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FIGURE 7C

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Address <http://www.eastman.com/Wizards/Adhesive/AdhesiveProp.asp> Go

Pressure Sensitive Adhesive Formulator
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Eastotac Hydrocarbon Resin

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[How To Use The Wizard](#)

[Return To Blend Composition](#) [Printer Friendly Report](#)

Blend Composition

Component *	% By Formulation	
	1	2
Eastotac H-100R	47.80	45.50
Milled Natural Rubber	42.30	42.00
Paraffin Oil	9.40	12.00

Properties 734

180 Peel (g/mm) Graph	25.1	20.2
PolyKen Tack (g) Graph	512.2	467.7
Rolling Ball Tack (in) Graph	2.5	1.4
Quick Stick (g/mm) Graph	17.8	15.0

[Done](#) [Internet](#)

RT Hold Power (hours) Graph	39.2	28.5
SAFT (C) Graph	112.2	109.1

745 [Return To Blend Composition](#) [Printer Friendly Report](#)

* The adhesive raw material components consisted of Eastotac H-100R resin, natural rubber and paraffin oil along with a hindered phenol antioxidant, all dispersed in Toluene. Each formulation above contain 0.5% of Anti-Oxidant.

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[Done](#) [Internet](#)

FIGURE 7D

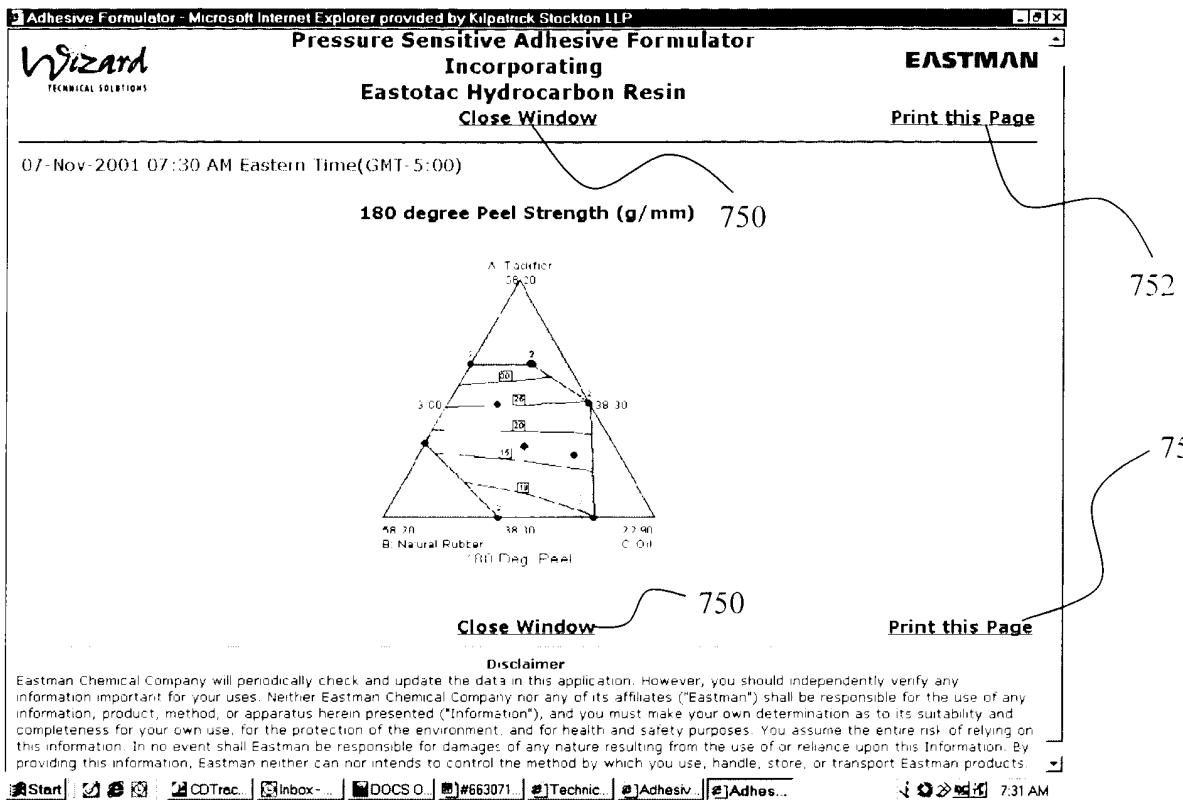


FIGURE 7E

Adhesive Formulator - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address <http://www.eastman.com/Wizards/Adhesive/AdhesivePropTestData.asp> Go

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[Return To Blend Composition](#) [Printer Friendly Report](#)

Formulation & Testing Data 745 799

Blend Composition

Component *	% By Formulation												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Eastotac H-100R	51.1	47.8	38.3	38.3	44.5	38.3	47.8	51.1	51.1	44.2	43.5	51.1	47.7
Milled Natural Rubber	40.9	38.3	49.7	42.8	52.0	49.7	38.3	45.4	40.9	44.9	41.6	45.4	45.1
Paraffin Oil	7.5	13.4	11.5	18.5	3.0	11.5	13.4	3.0	7.5	10.4	14.4	3.0	6.7

Properties

180 Peel (g/mm) Graph	32.7	24.7	7.4	8.6	15.6	6.0	24.1	33.1	34.4	17.4	17.4	37.2	23.3
PolyKen Tack (g) Graph	636	460	365	386	399	269	453	569	533	411	458	616	591
Rolling Ball Tack (in) Graph	5.7	1.7	0.7	0.6	1.7	0.8	1.8	6.4	2.7	1.0	1.0	7.1	1.3
Quick Stick (g/mm) Graph	23.2	19.6	6.5	8.4	11.0	6.3	18.2	20.3	22.9	12.6	13.3	23.1	16.8
RT Hold Power (hours) Graph	35.6	13.7	48.8	10.5	>100	64.4	14.0	70.8	33.0	44.6	15.2	86.2	58.6
SAFT (C) Graph	105.6	90.5	121.2	94.2	126.7	115.0	92.6	119.1	101.5	120.4	103.8	126.2	120.1

[Return To Blend Composition](#) [Printer Friendly Report](#)

* The adhesive raw material components consisted of Eastotac H-100R resin, natural rubber and paraffin oil along with a hindered phenol antioxidant, all dispersed in Toluene. Each formulation above contain 0.5% of Anti-Oxidant.

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FIGURE 7F

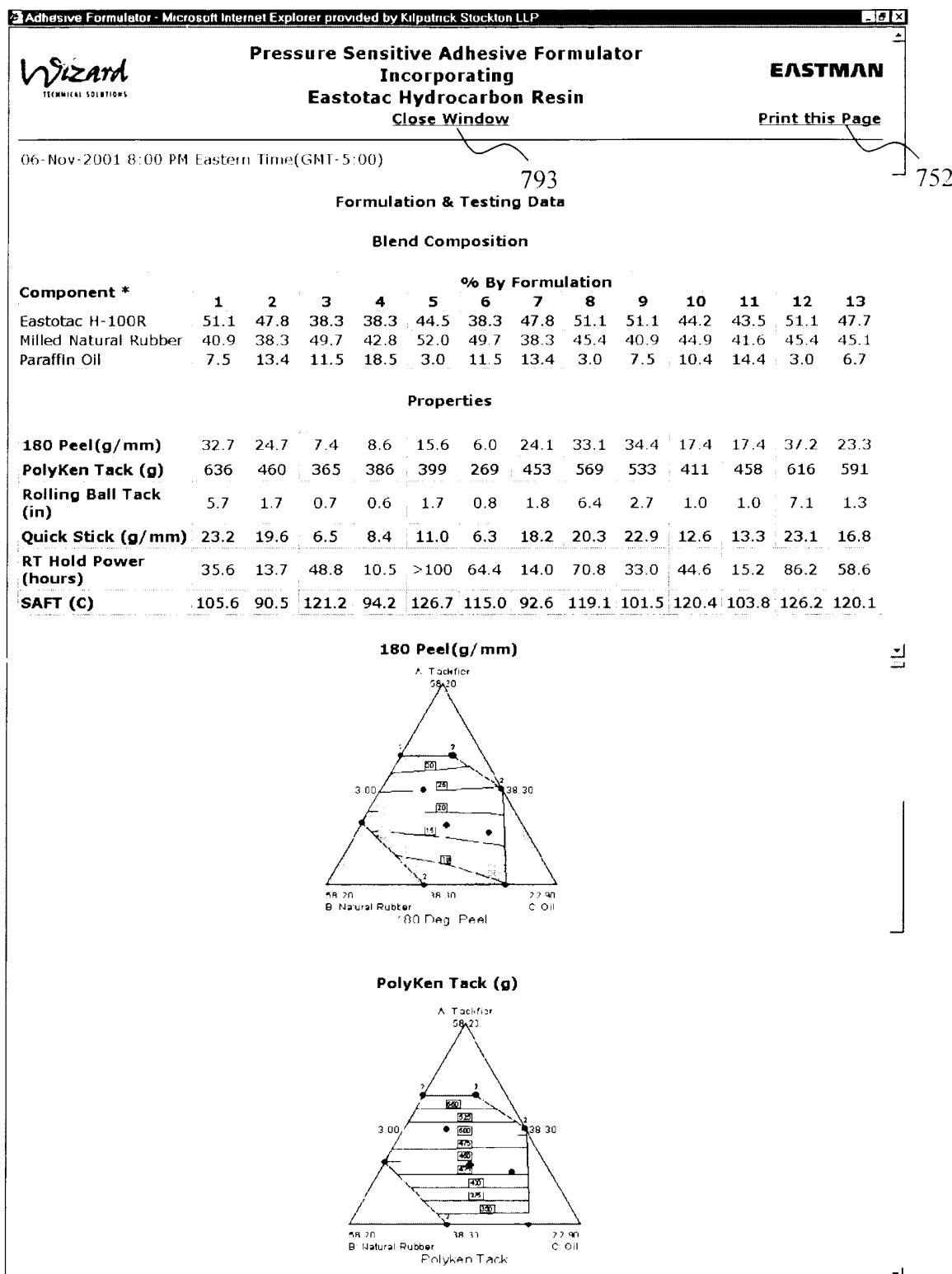


FIGURE 7G

Appln. Ser. No. To Be Assigned
SOFTWARE ENABLED WIZARDS
Inventors: BASSETT et al.
Express Mail No. EL 834 336 204 US

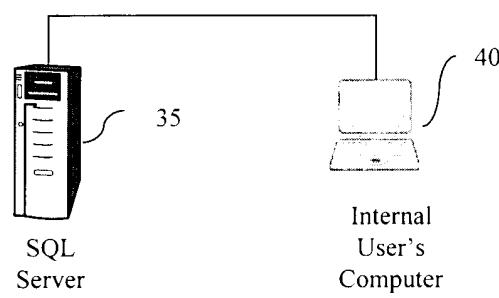


FIG. 8

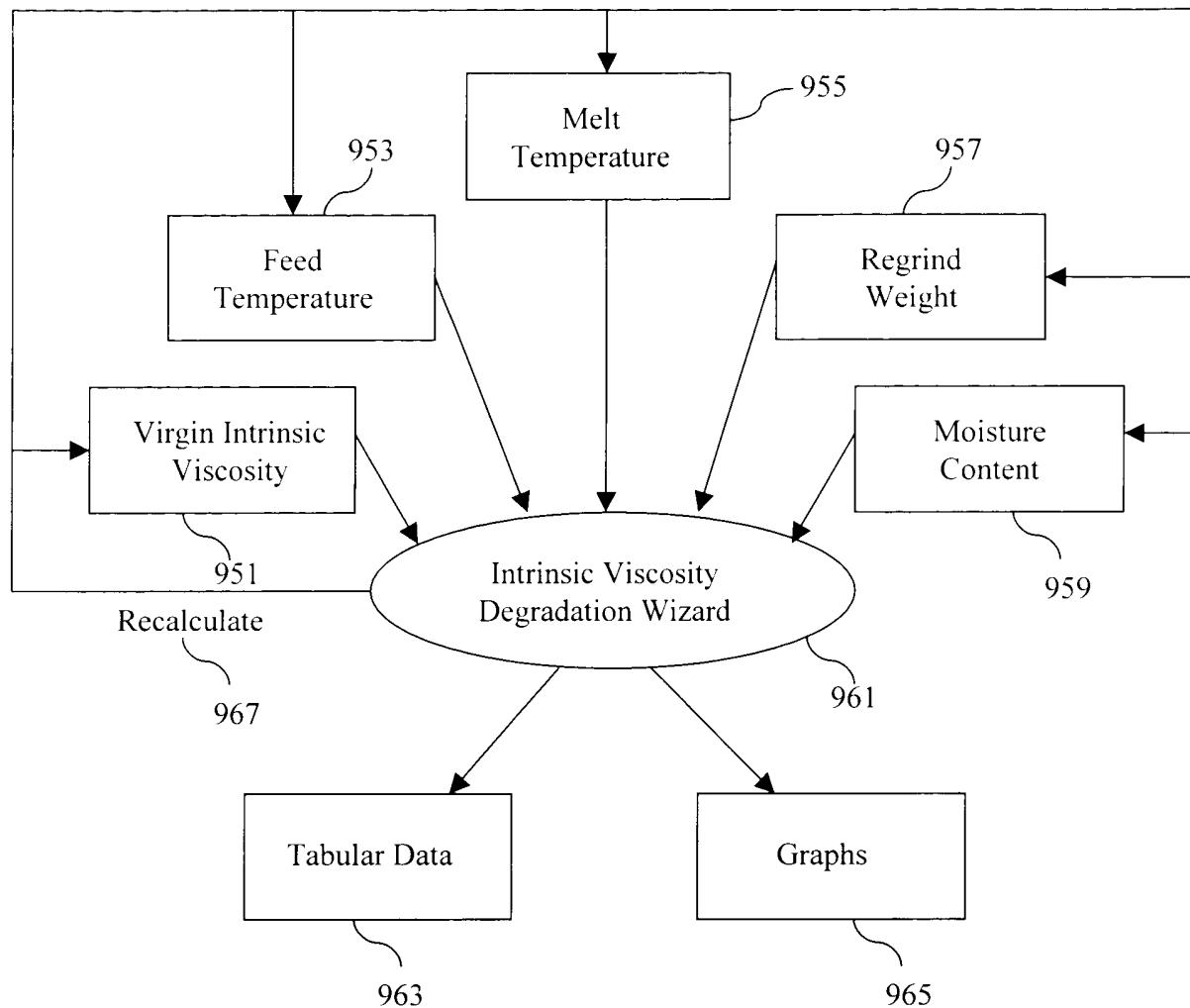


FIGURE 9A

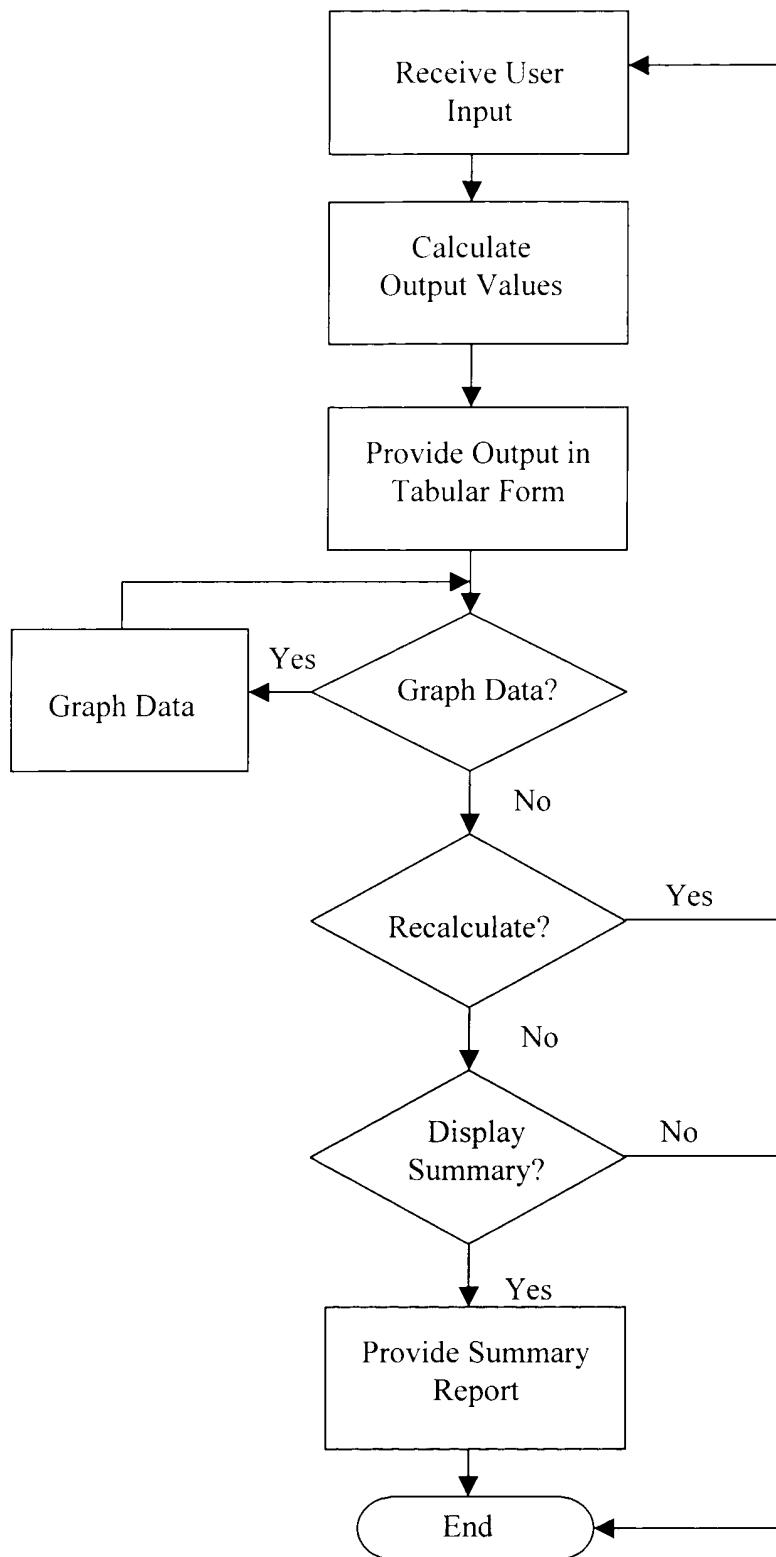


FIGURE 9B

3 Intrinsic Viscosity Degradation Model For Eastapak PET - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address <http://www.eastman.com/Wizards/IVDegradation/IVDegradationInputs.asp> 900

Go

Wizard TECHNICAL SOLUTIONS **EASTMAN**

Contact Us 991 How To Use The Wizard Close Window

Input Parameters:

Virgin Resin Intrinsic Viscosity: * 990 **HELP?** 912 **Printer Friendly Report** 993

Pellet Feed Temperature: * 30 °C 999

Melt Temperature: * 275 °C 990

Virgin Resin Moisture Content: * .005 wt% 906

Regrind Ratio: * 5 wt% 905

Regrind Moisture: * .007 wt% 904

Predicted Effect on Intrinsic Viscosity 903

Click the appropriate link to view the graph

a. Regrind Effect
b. Virgin Resin Intrinsic Viscosity Effect
c. Melt Temperature Effect
d. Feed Temperature Effect
e. Passes Graph
f. Regrind Moisture Effect
g. Virgin Resin Moisture Effect

Intrinsic Viscosity: 907A **Calculate** 907A

Intrinsic Viscosity before Pass 1: 0.000 dl/g 950

Click here for the Conversion Table

<http://www.eastman.com/Wizards/IVDegradation/> 999

Passes Detail:

Passes	Intrinsic Viscosity
Pass 1	0.000
Pass 2	0.000
Pass 3	0.000
Pass 4	0.000
Pass 5	0.000
Pass 6	0.000
Pass 7	0.000
Pass 8	0.000

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Internet 931 933 935

FIGURE 9C

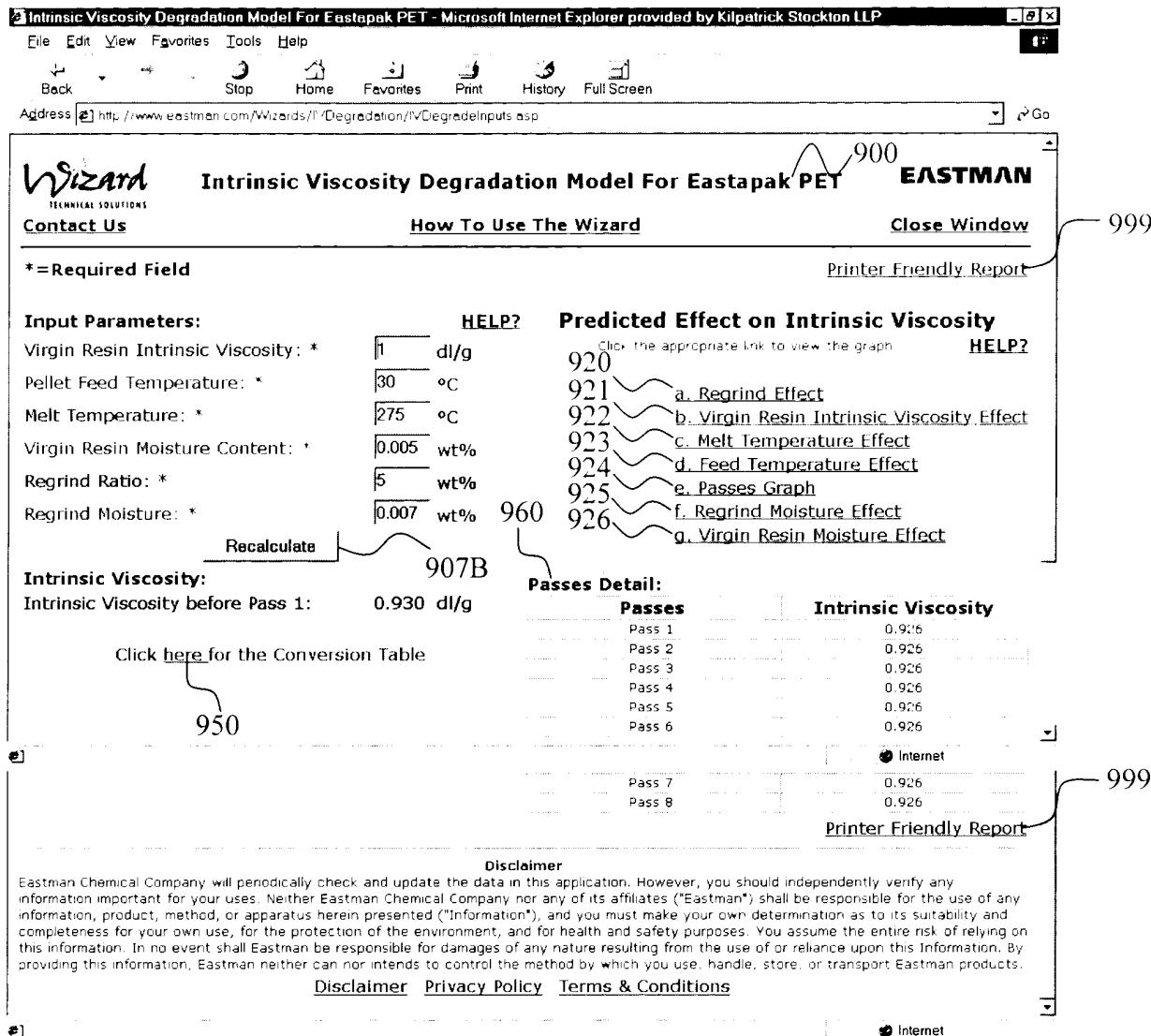


FIGURE 9D

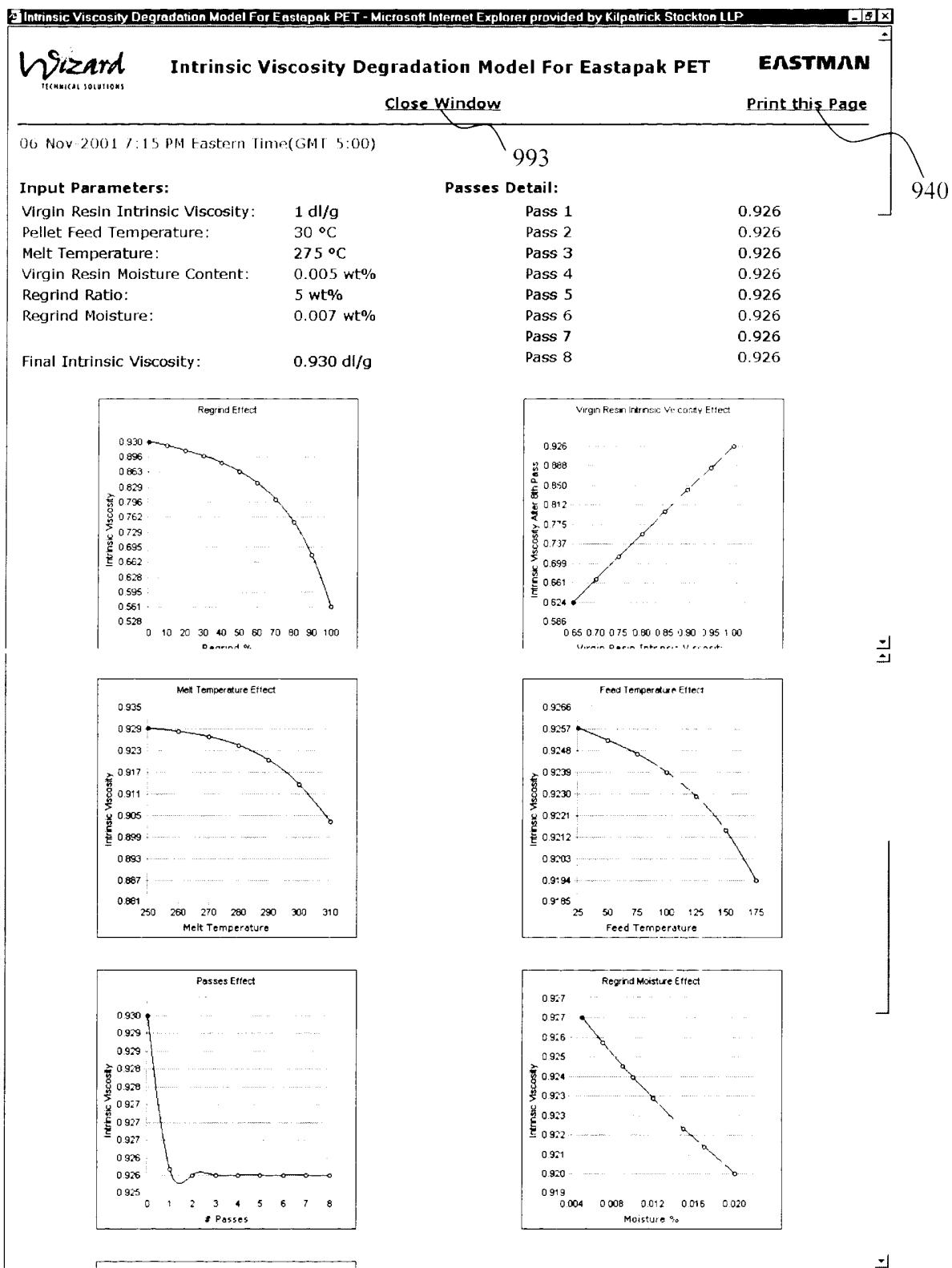


FIGURE 9E

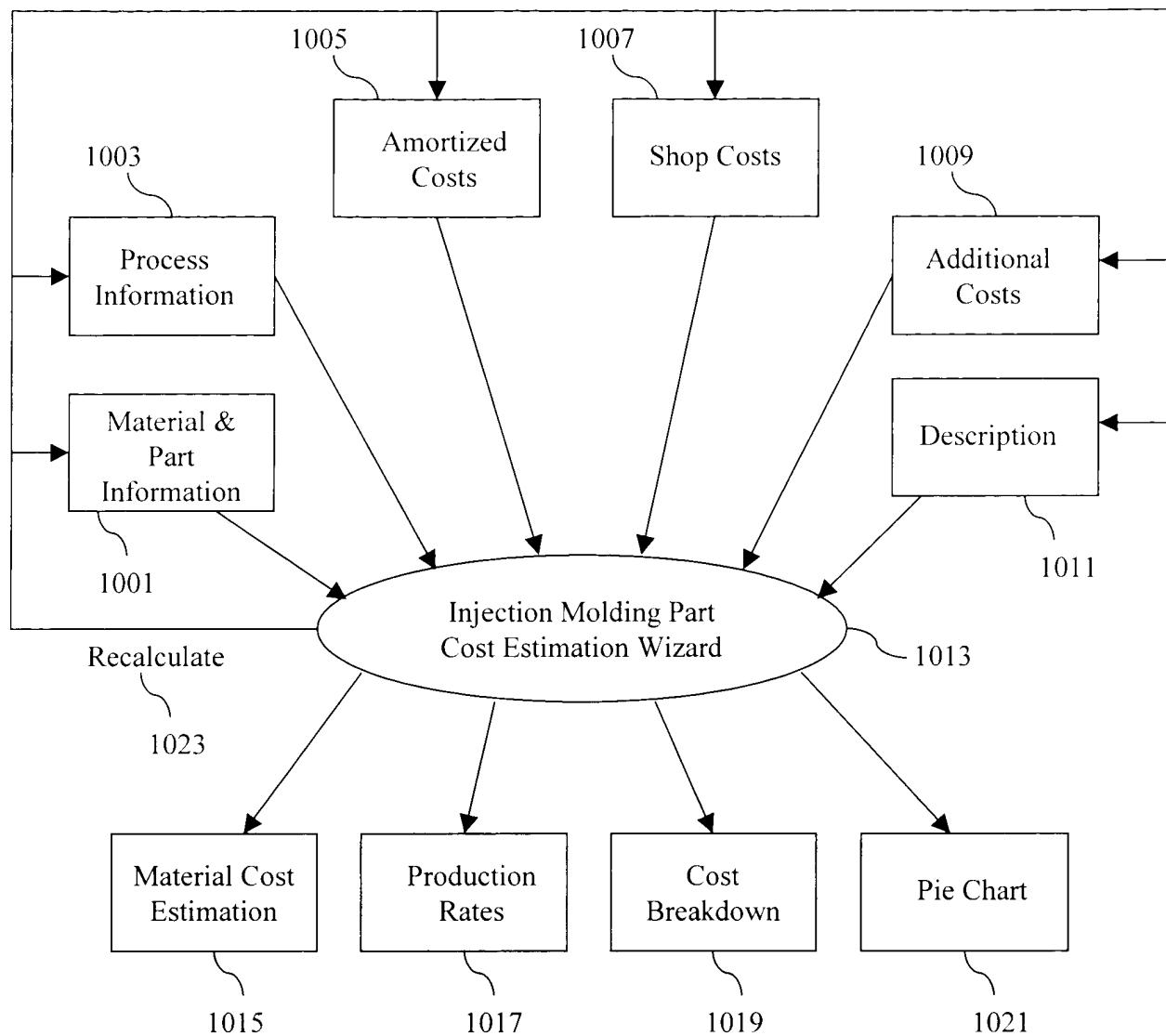


FIGURE 10A

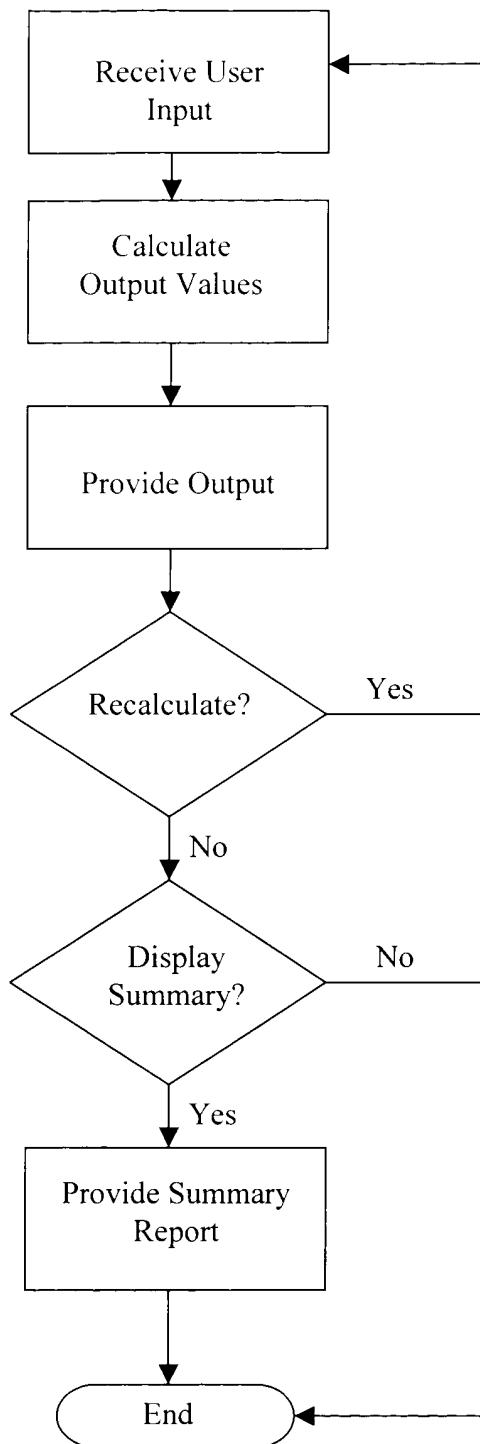


FIGURE 10B

Appl. Ser. No. To Be Assigned
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 Inventors: BASSETT et al.
 Express Mail No. EL 834 336 204 US

Injection Molding Part Cost Estimation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address <http://www.eastman.com/Wizards/PartCostEstimator/PartCostEstimator.asp> Go

Wizard TECHNICAL SOLUTIONS

Injection Molding Part Cost Estimation 1000 **EASTMAN**

Contact Us 1091 **How To Use The Wizard** 1012 **Close Window** 1093

***=Required Field**

Input Values 1090 **Predicted Values** 1060

Descriptions **HELP?** **Material Cost Estimations:** **HELP?** 1090

Company: 1040 Material Cost per Part:
 Name of part: 1042 Virgin Material Use Rate:
 Description: 1044 Material Cost per
 Material: 1046 Acceptable Part:
 Preferred Currency: 1048

Material and Part Information 1002 **HELP?** **Production Rates:** **HELP?** 1090

Part Mass: * 100 grams (mass for 1 part only)
 Runner Mass: * 0 grams (enter 0 if hot runner system or if reground)
 Material Cost: * 1 /kilogram 1004

Gross Production Rate:
 Rejected Parts:
 Acceptable Parts Prod. Rate:
 Annual Production Rate:

Process Information 1006 **Cost Breakdown:** **HELP?** 1064

Number Of Cavities: * 1 1008 Material: **HELP?**
 Estimated Cycle Time: * 30 Seconds 1010 Operating (Press) Costs:
 Reject Rate * 10% 1014 Amortized Costs:
 % of Rejects Reground: * 50% 1016 Additional Costs:
 Total Part Cost:

Amortized Costs **HELP?**

Equipment Costs: * 0 1018
 Equipment Amortization Time: * 10 Years 1020
 Mold Cost: * 0 1022
 Mold Amortization Time: * 2 Years 1024

Shop Costs **HELP?** 1090

(For U.S. only) [click here](#) to get the rate information

Internet

FIGURE 10C

Injection Molding Part Cost Estimation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address Go

(For U.S. only) [click here](#) to get the rate information

1060

Operating hours per week: * 1026

Project Down Time: * 1028

Machine Cost: * 1030

Additional Cost

Secondary Operations: * 1032

Overhead Expenses: * 1034

Miscellaneous Expenses: * 1036

[Calculate](#) 1050

[Printer Friendly Report](#) 1099

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FIGURE 10D

Injection Molding Part Cost Estimation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address <http://www.eastman.com/Wizards/PartCostEstimator/PartCostEstimator.asp?FirstLoad=Yes&Curr=US&CalcType=ReCalc> Go

Wizard TECHNICAL SOLUTIONS **Injection Molding Part Cost Estimation** **EASTMAN**

[Contact Us](#) [How To Use The Wizard](#) [Close Window](#)

* = Required Field

[Printer Friendly Report](#) 1099

Input Values

Descriptions	HELP?
Company:	ABC
Name of part:	Name
Description:	Description
Material:	Plastic
Preferred Currency:	US

Predicted Values

1060

Material Cost Estimations:

Material Cost per Part:	50.00 US per 1000 parts
Virgin Material Use Rate:	5.13 kilograms per hour
Material Cost per Acceptable Part:	52.78 US per 1000 parts

Material and Part Information

HELP?
Part Mass: * 50 grams (mass for 1 part only)
Runner Mass: * 0 grams (enter 0 if hot runner system or if reground)

Predicted Values

1062

Production Rates:

HELP?	
Gross Production Rate:	108.00 parts per hour
Rejected Parts:	10.80 parts per hour

Material 1050B **Internet**

Cost: * 1 US/kilogram

Recalculate

Process Information

HELP?
Number Of Cavities: * 1
Estimated Cycle Time: * 30 Seconds
Reject Rate: * 10%
% of Rejects Reground: * 50%

Recalculate

Cost Breakdown:

1064

HELP?	
Material:	52.78 US per 1000 parts
Operating (Press) Costs:	514.40 US per 1000 parts
Amortized Costs:	73.99 US per 1000 parts
Additional Costs:	110.00 US per 1000 parts
Total Part Cost:	751.17 US per 1000 parts

Amortized Costs

HELP?
Equipment Costs: * 100000 US
Equipment Amortization Time: * 10 Years
Mold Cost: * 10000 US
Mold Amortization Time: * 2 Years

Internet

FIGURE 10E

Injection Molding Part Cost Estimation - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

Wizard TECHNICAL SOLUTIONS **Injection Molding Part Cost Estimation** **EASTMAN**

[Close Window](#) 1093 [Print this Page](#)

06 Nov 2001 7:28 PM Eastern Time(GMT-5:00)

Input Values

Descriptions

Company:	ABC
Name of part:	
Description:	Description
Material:	Plastic
Preferred Currency:	US

Material and Part Information

Part Mass:	50 grams
Runner Mass:	0 grams
Material Cost:	1 US per kilogram

Process Information

Number Of Cavities:	1
Estimated Cycle Time	30 Seconds
Reject Rate:	10 %
% of Rejects Reground:	50 %

Amortized Costs

Equipment Costs:	100000 US
Equipment Amortization Time:	10 Years
Mold Cost:	10000 US
Mold Amortization Time:	2 Years

Shop Costs

Operating hours per week:	40
Project Down Time:	10 %
Machine Cost:	50 US per hour

Additional Cost

Secondary Operations	2 US per part
Overhead Expenses:	4 US per part
Miscellaneous Expenses:	5 US per part

Predicted Values

Material Cost Estimations:

Material Cost per Part:	50.00 US per 1000 parts
Virgin Material Use Rate:	5.13 kilograms per hour
Material Cost per Acceptable Part:	52.78 US per 1000 parts

Production Rates:

Gross Production Rate:	108.00 parts per hour
Rejected Parts:	10.80 parts per hour
Acceptable Parts Prod. Rate:	97.20 parts per hour
Annual Production Rate:	202,731.43 per 1000 parts

Cost Breakdown:

Material:	52.78 US per 1000 parts
Operating (Press) Costs:	514.40 US per 1000 parts
Amortized Costs:	73.99 US per 1000 parts
Additional Costs:	110.00 US per 1000 parts
Total Part Cost:	751.17 US per 1000 parts

Total Cost Predicted

1093 [Close Window](#) [Print this Page](#)

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FIGURE 10F

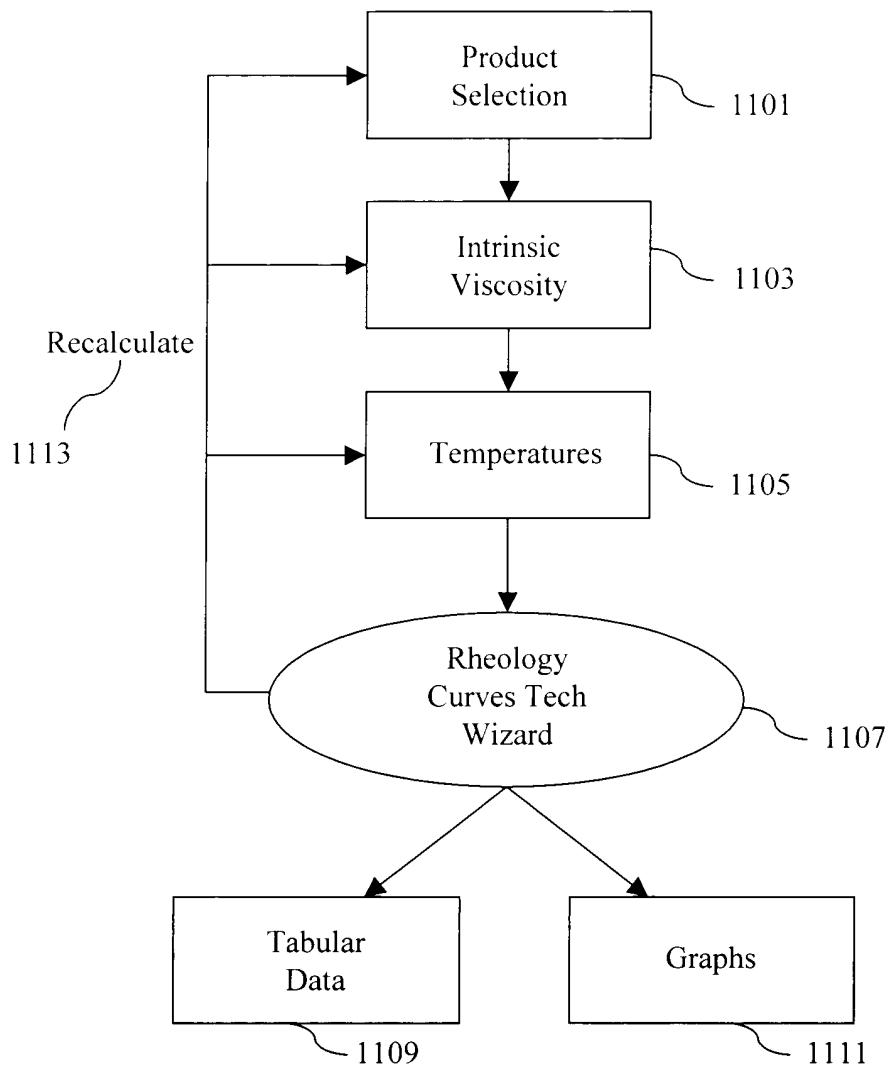


FIGURE 11A

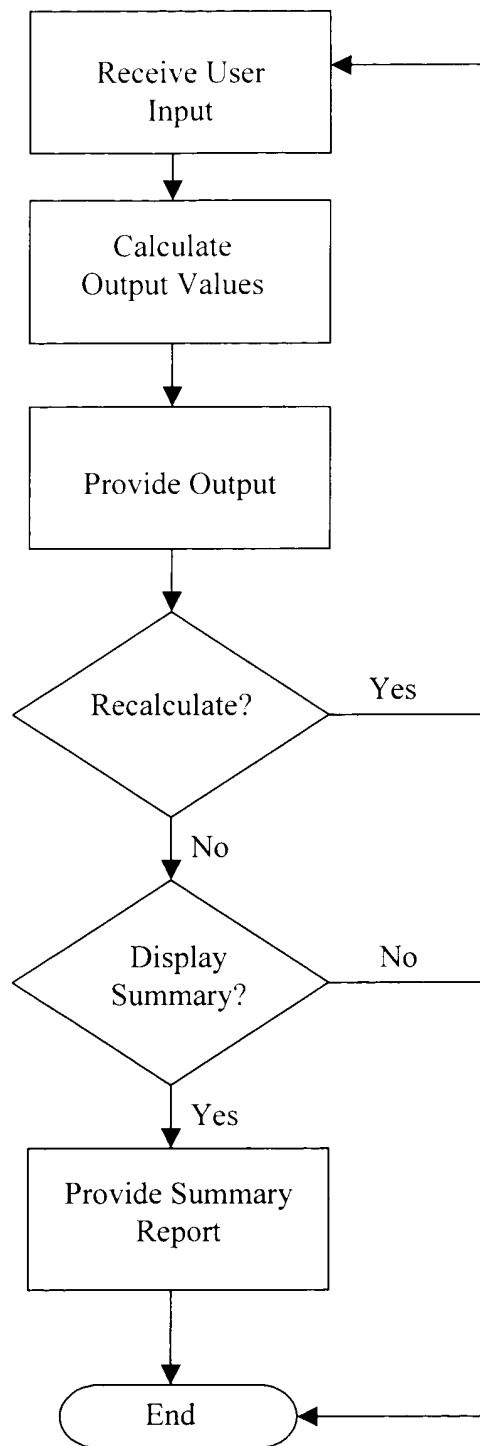


FIGURE 11B

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Inventors: BASSETT et al.
Express Mail No. EL 834 336 204 US

3 Rheology Curves and Data - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Rheology Curves and Data 1100

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*=Required Field

Product Group: * 1102

Product: * 1104

Click here to Continue 1106

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1131 1133 1135

FIGURE 11C

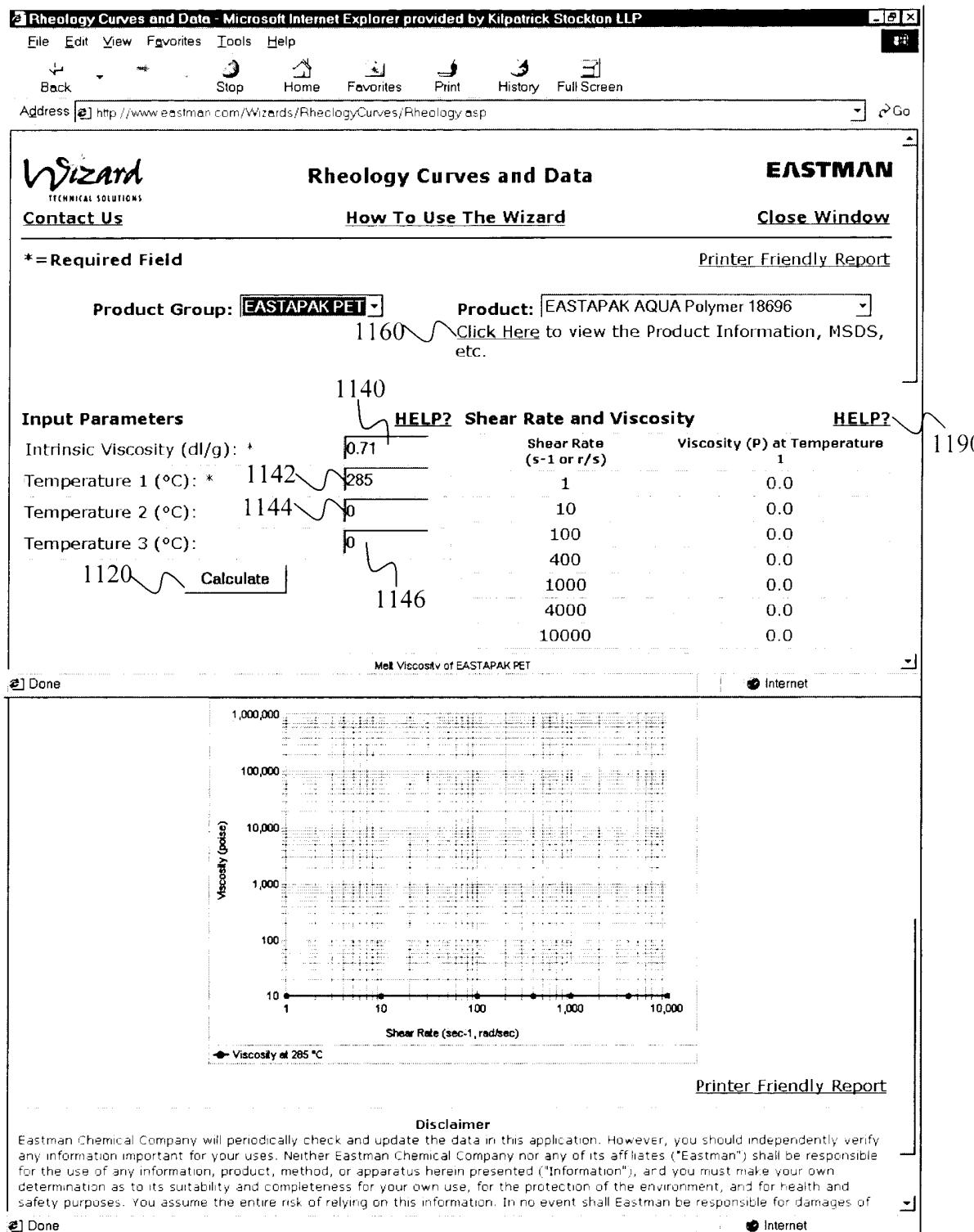


FIGURE 11D

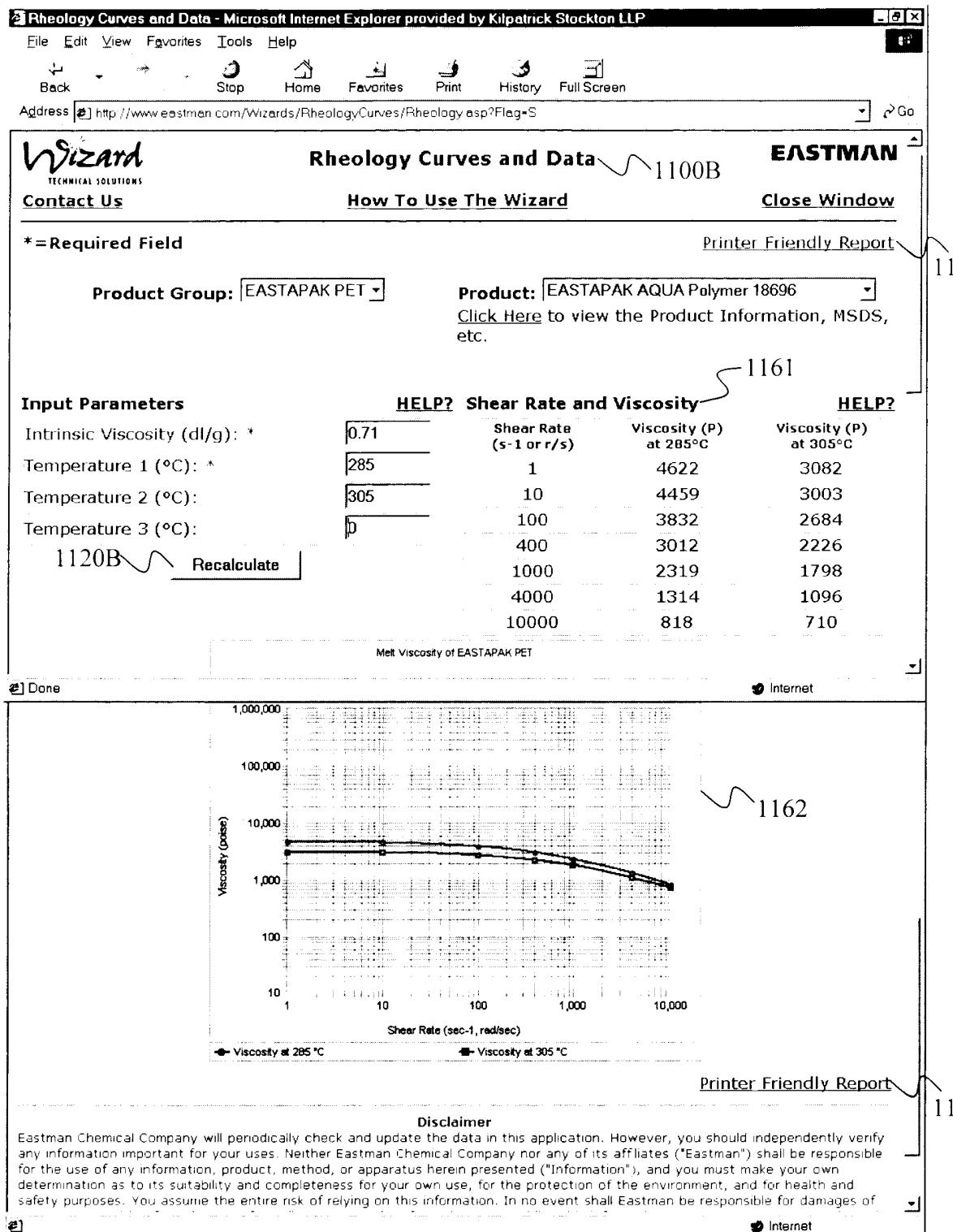


FIGURE 11E

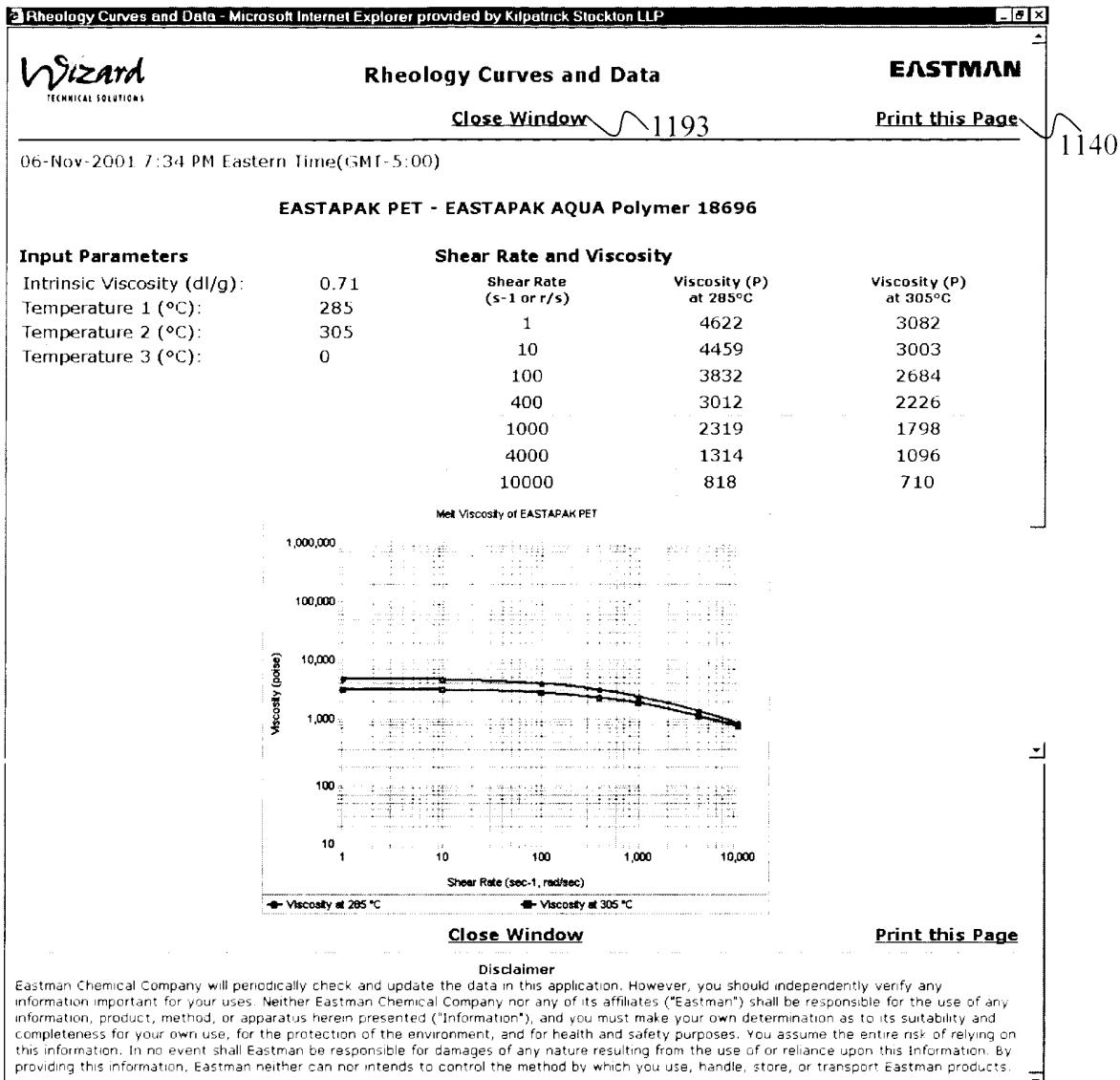


FIGURE 11F

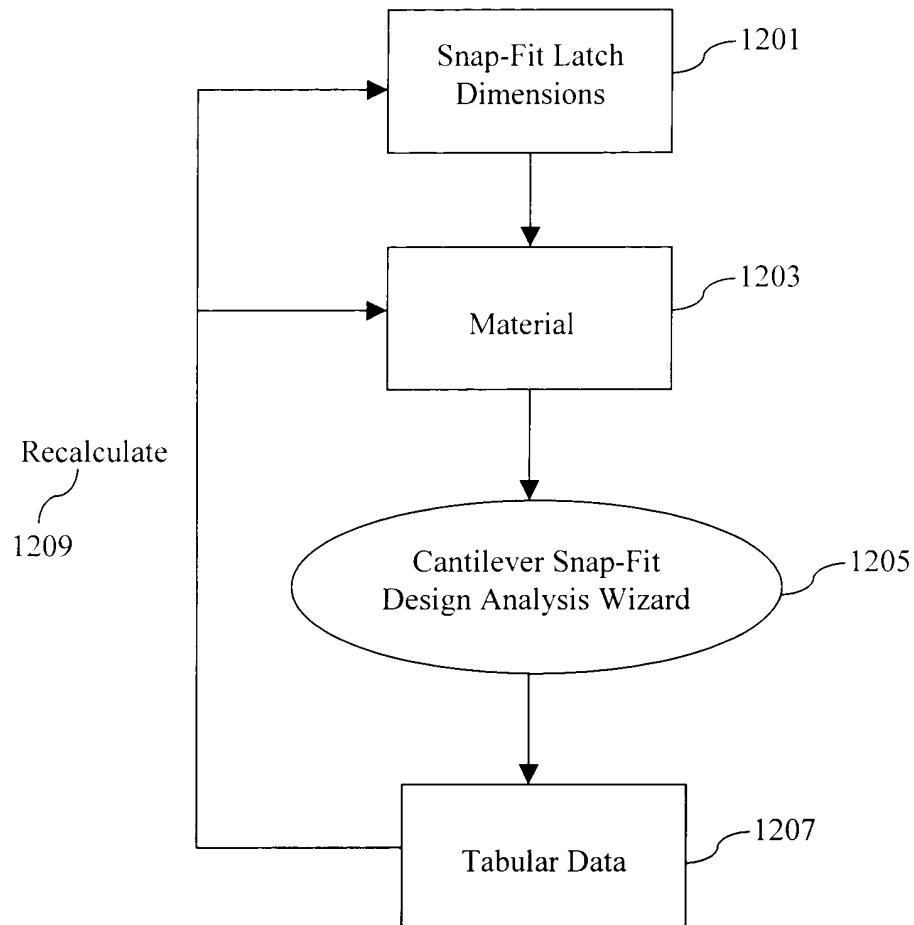


FIGURE 12A

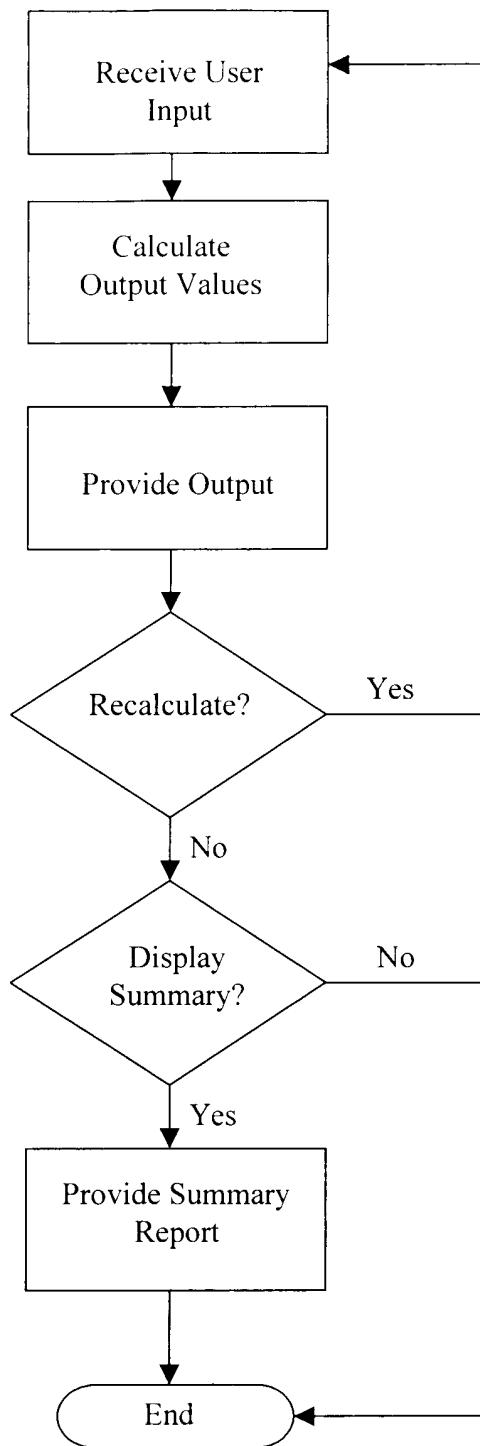


FIGURE 12B

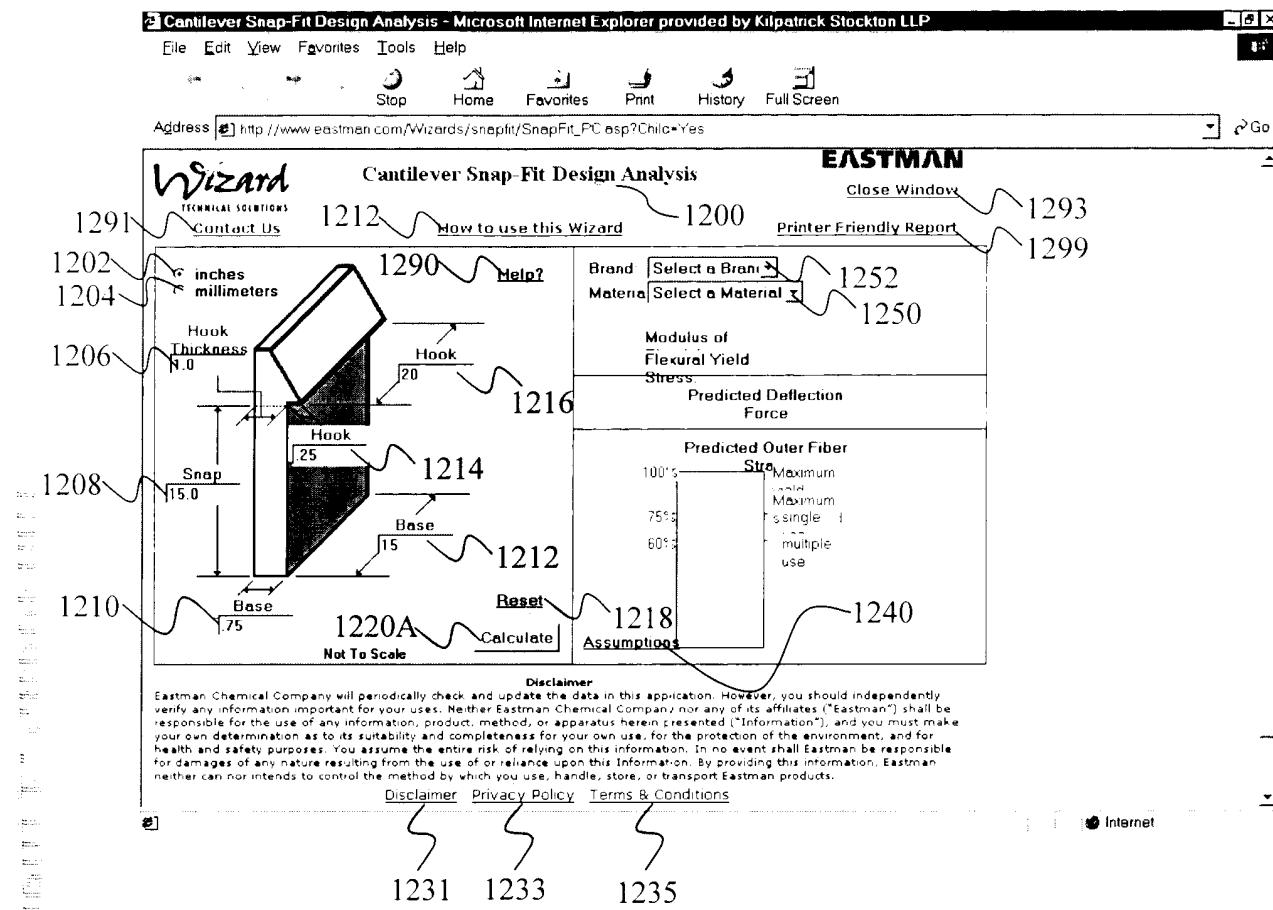


FIGURE 12C

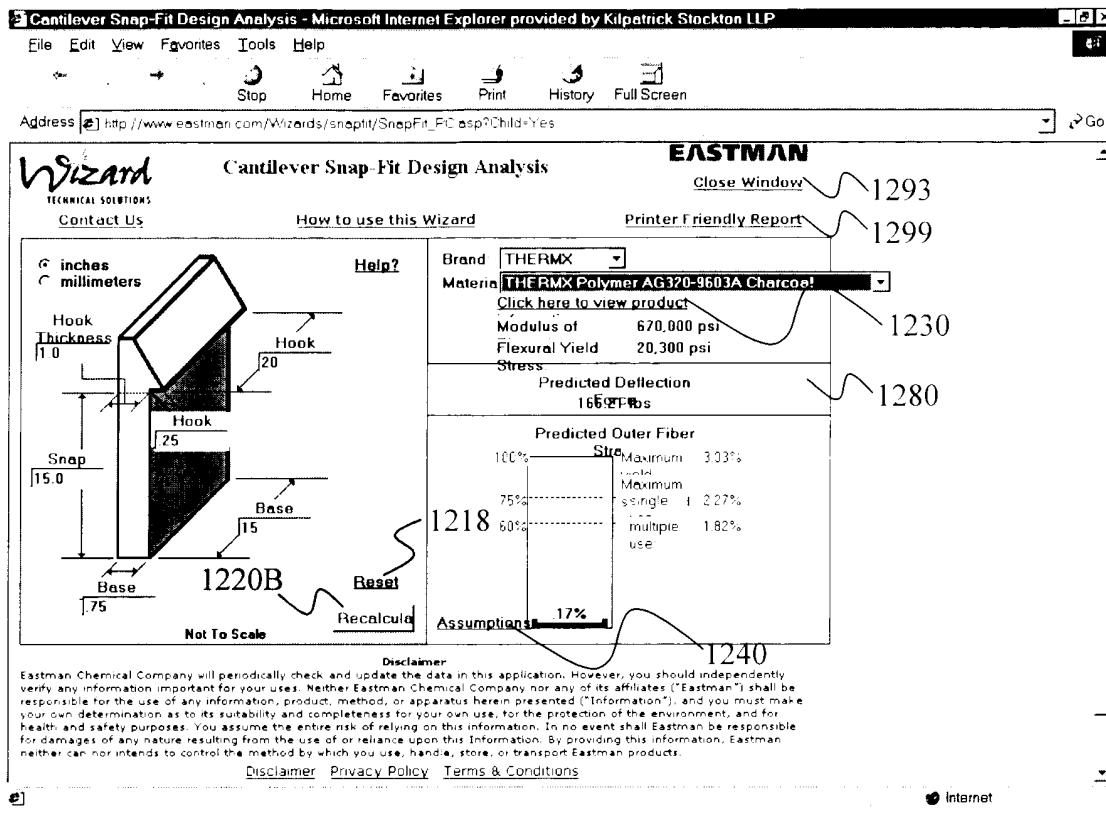


FIGURE 12D

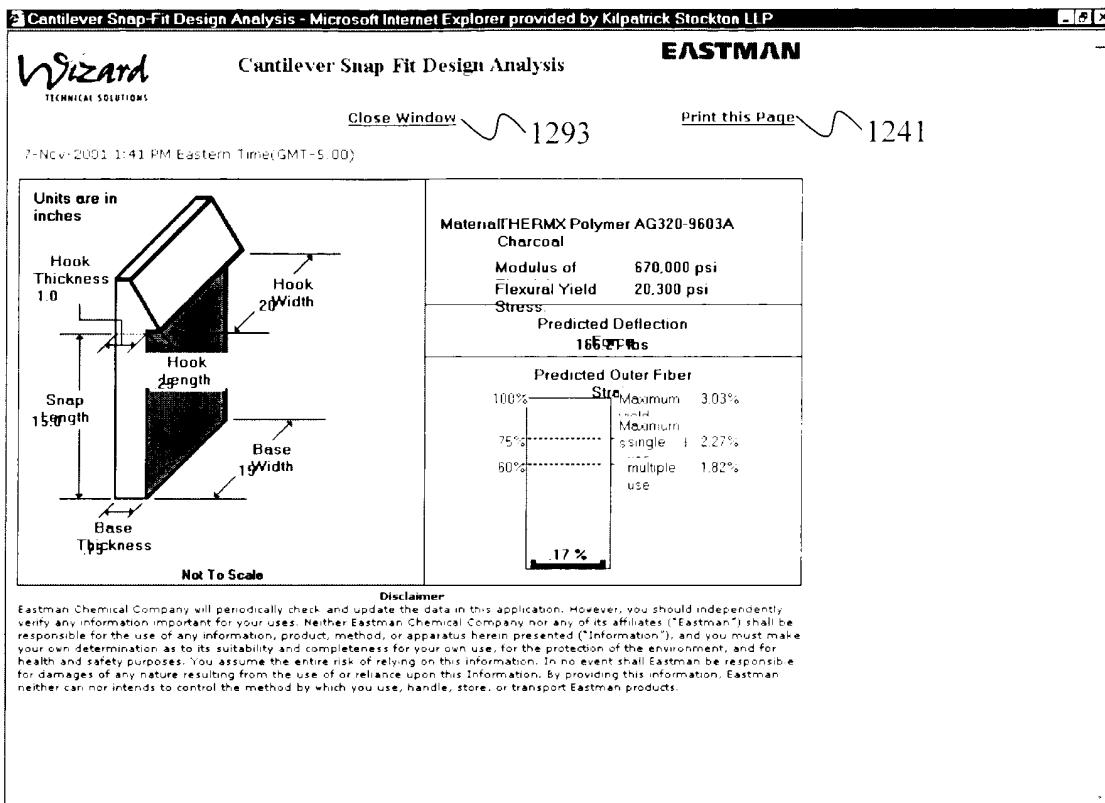


FIGURE 12E

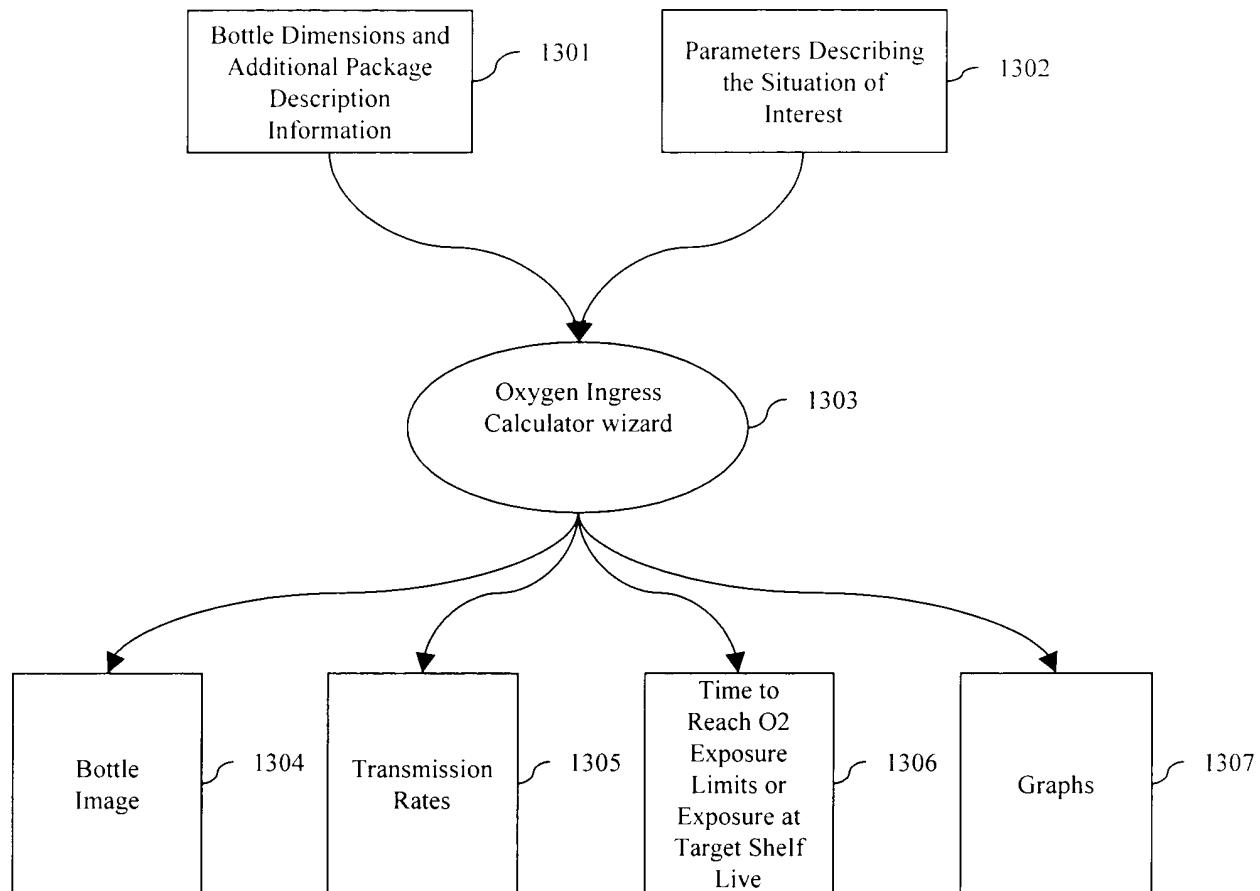


FIG. 13A

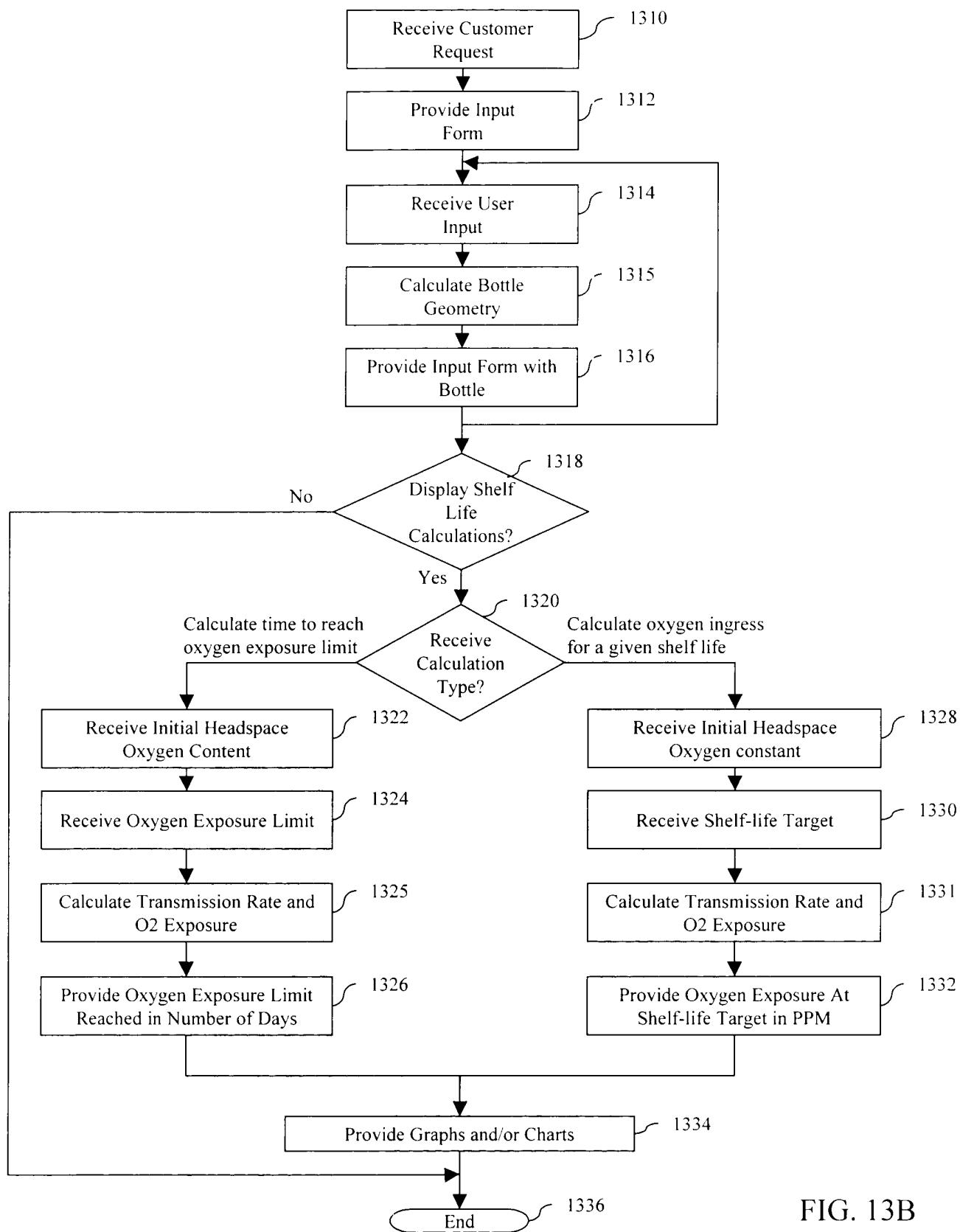


FIG. 13B

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Oxygen Ingress Calculator for PET Monolayer Containers

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***=Required Field**

Container Specifications

Container Volume: * ml [HELP?](#)

Container Type: * [HELP?](#)

Headspace Volume: ml

Container Weight: * grams

Diameter: * mm

Sidewall Ht/Shoulder Ht: *

Finish Diameter: * [HELP?](#)

Closure Type: * [HELP?](#)

[Draw Bottle](#)

[Click here for Conversion Table](#)

Assumptions [Click here for Shelf Life Calculations](#) [Internet zone](#)

Diagram of Container:

Dsw = Diameter of Sidewall; Hb = Height of Base; Hsw = Height of Sidewall; Hsh = Height of Shoulder

FIG. 13C

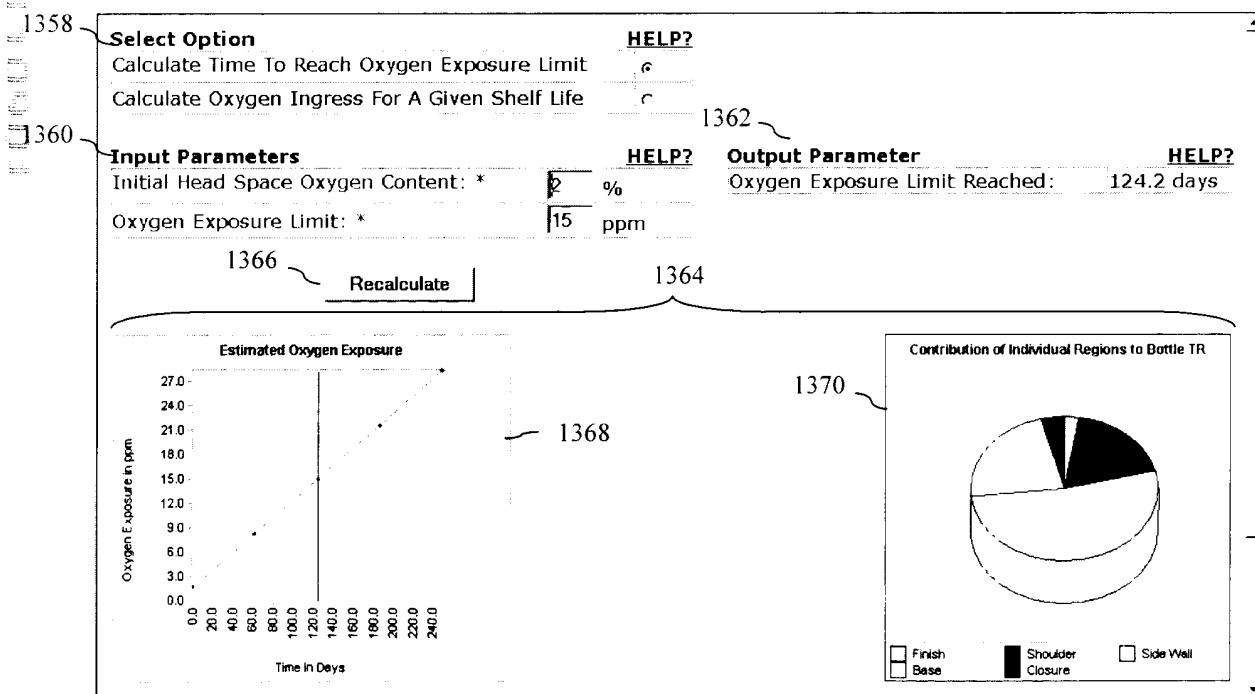


FIG. 13D

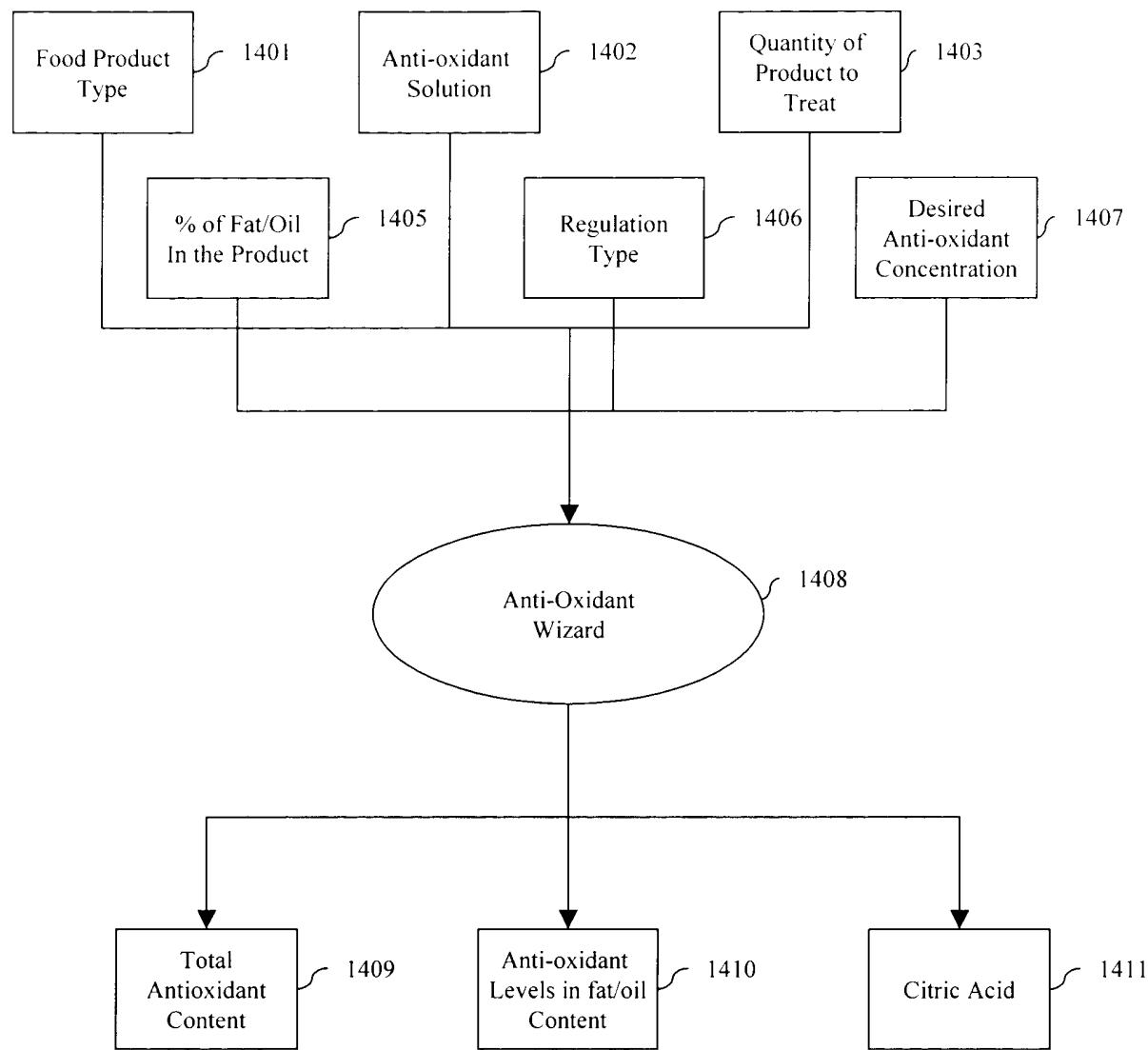


FIG. 14A

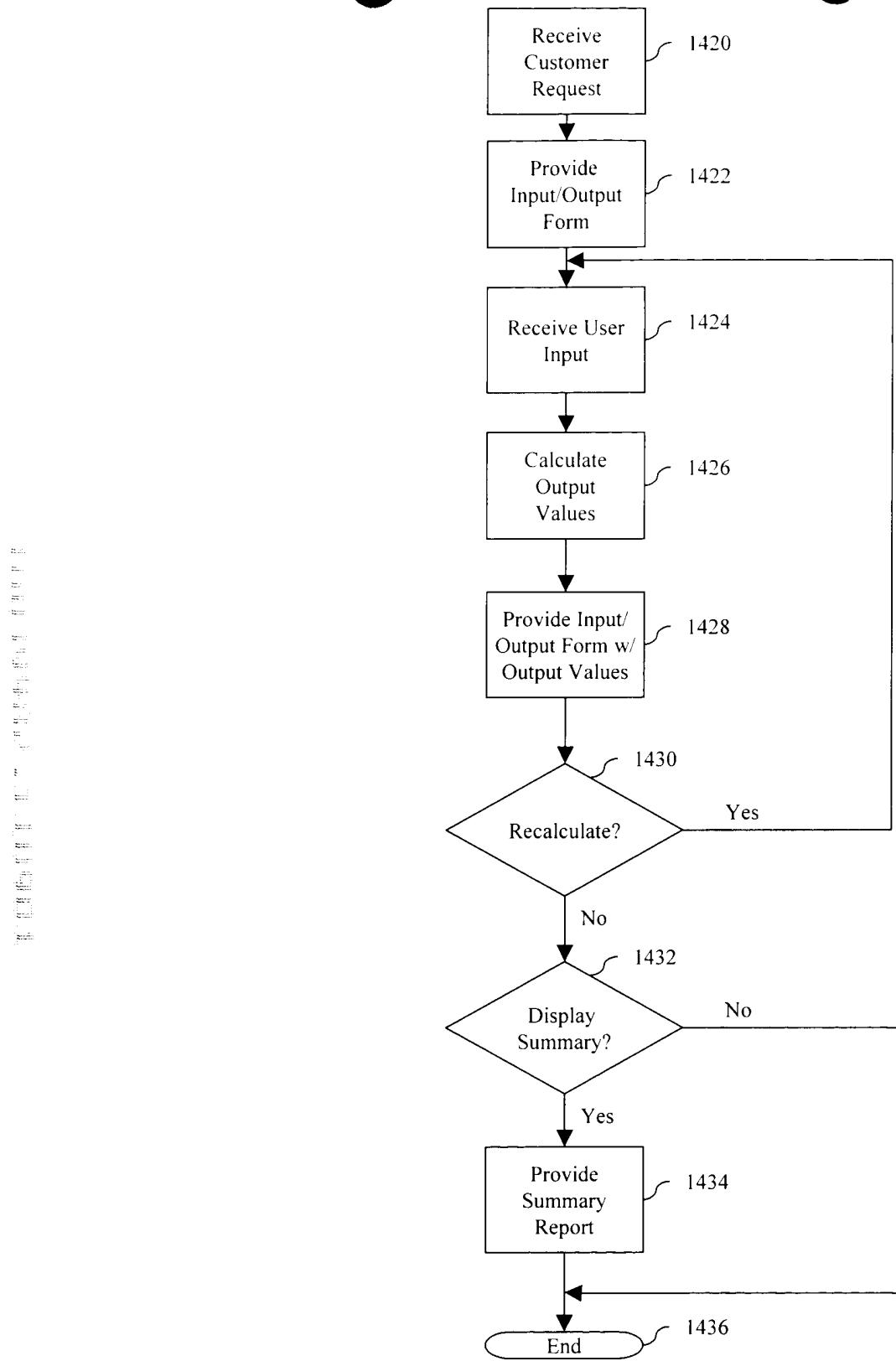


FIG. 14B

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1450

1452

Antioxidant Calculator - Microsoft Internet Explorer

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*** = Required Field** Click here to see a listing of Recommended Tenox Products for various Applications

Input Parameters

Food Product: *

Tenox Product to be used: *

Quantity of Food Product to treat: *

Weight units: *

Fat/oil percentage in food product: *

Regulation to be used: *

Total Antioxidant Concentration desired: * ppm

Do you wish to convert the Antioxidant weight to volume: * Yes No

Antioxidant levels in fat/oil content

BHA
BHT
TBHQ
Propyl Gallate
Total Antioxidant Level
Citric Acid

Amount of Tenox 6 to apply:

Done Local intranet zone

FIG. 14C

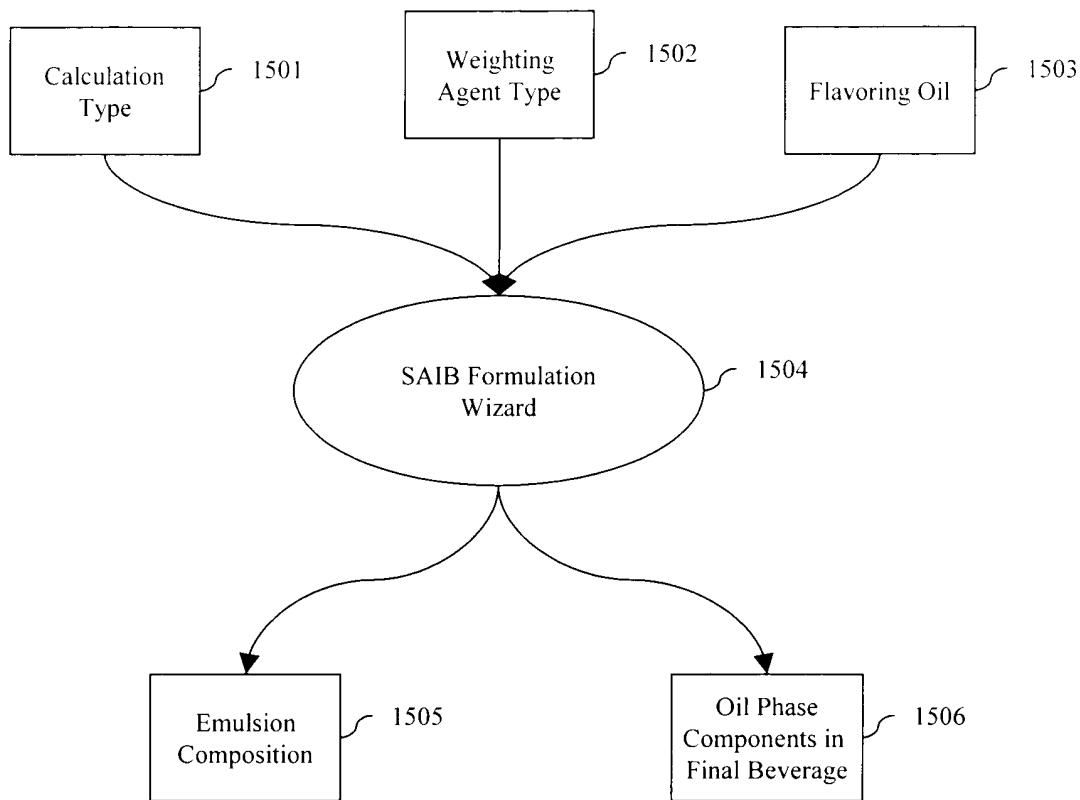


FIG. 15A

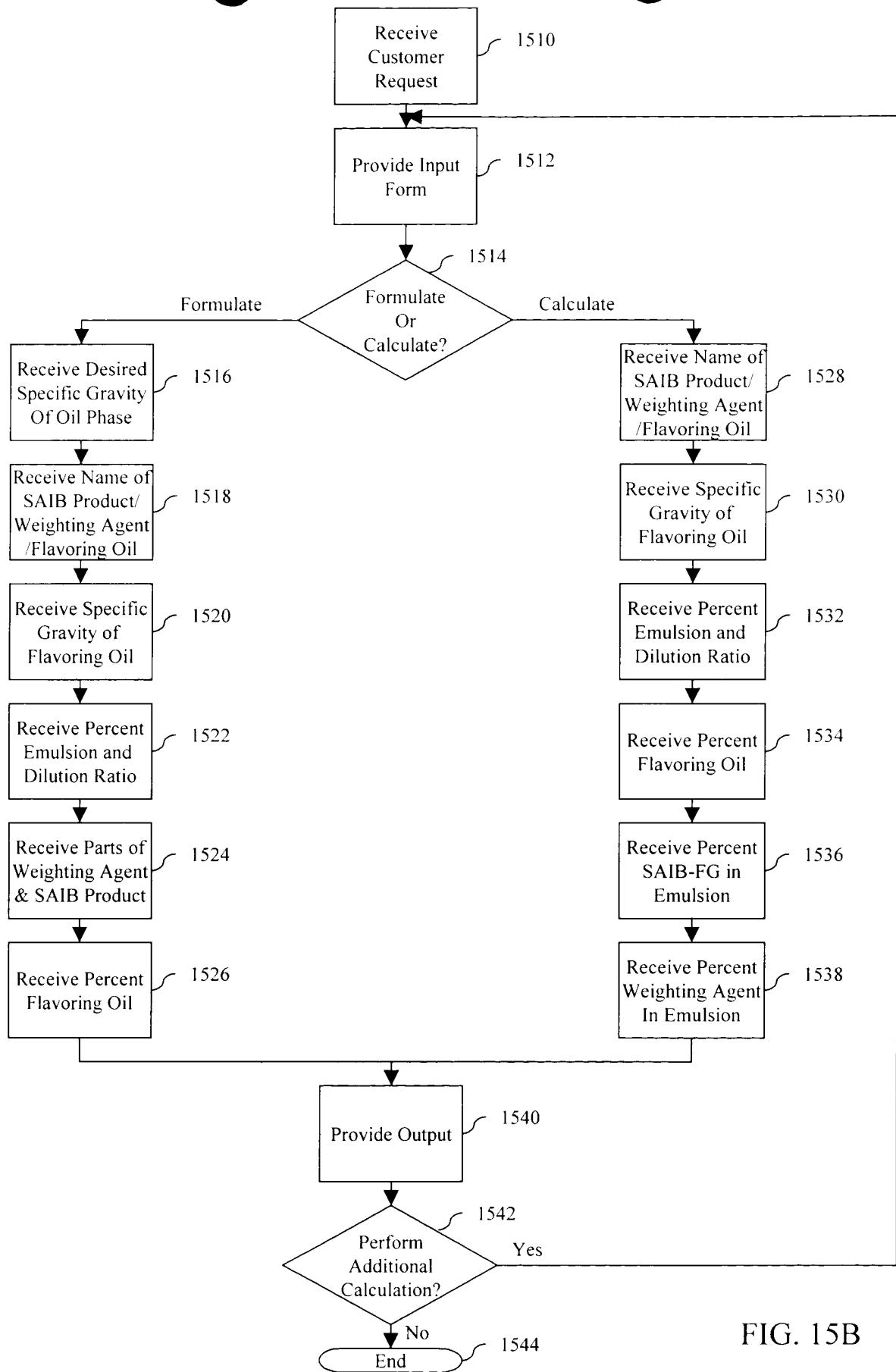


FIG. 15B

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2 http://eastman/wizards/prototype/saibformulation/SAIBInfo.asp - Microsoft Internet Explorer

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Wizard **SAIB Beverage Formulation** **EASTMAN**

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To access the online Eastman SAIB-FG brochure, click here: [Eastman SAIB-FG Brochure](#)
For additional information about Eastman SAIB, click here: [SAIB - The Oldest New Ingredient](#)
For information on regulations, click here: [Regulatory Status of SAIB](#)

Federal Register listing for SAIB: [SAIB Federal Register Excerpt](#)
For additional information about specific SAIB products, click here: [Eastman SAIB Products Information](#)

General Information

Enter Project Description: [HELP?](#)

Enter Sample description: *

Do you wish to: (Choice 1) formulate to a desired oil phase specific gravity or (Choice 2) calculate an oil phase specific gravity from existing ratios of oil and weighting agents?: *

Choice 1

Enter desired specific gravity of oil phase: *

Select name of SAIB product: *

Select name of additional weighting agent: *

Enter name of flavoring oil to be used: *

Enter specific gravity of flavoring oil: *

[HELP?](#) **Intermediate values**

Dilution ratio	390:1
Specific Gravity of Weighting agent	0.00
Specific Gravity of SAIB Product	0.00
Specific gravity of SAIB in SAIB Product	0.00
Percent SAIB in SAIB Product	0 %
Specific Gravity of Weighting Agent(s)	0
Ratio of weighting agents to oil	0:1

[Local Intranet](#)

1550 1558
1552 1559
1553 1560
1554 1561
1555 1562
1556 1563
1557 1564
1565

FIG. 15C

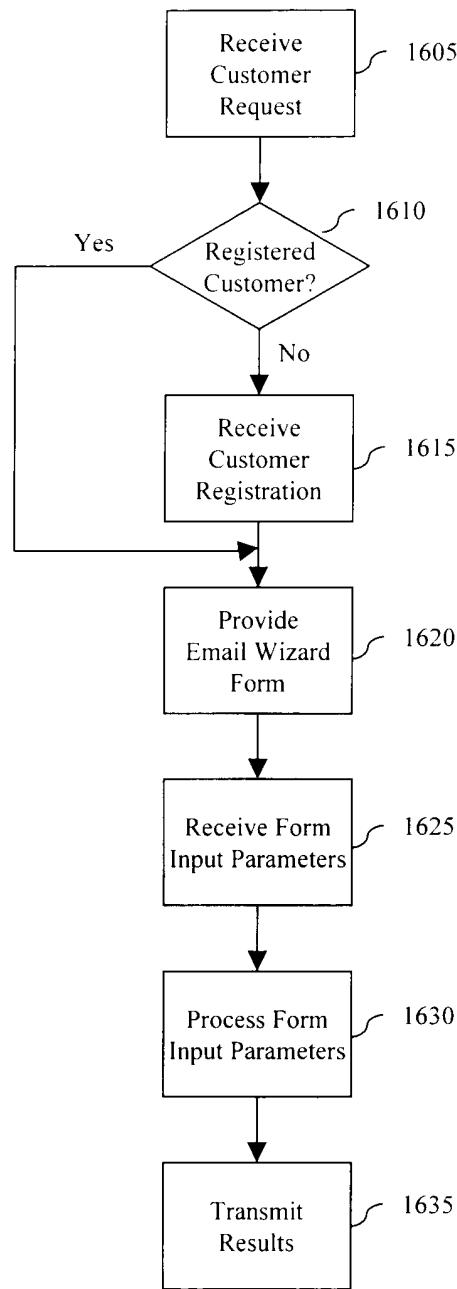


FIG. 16

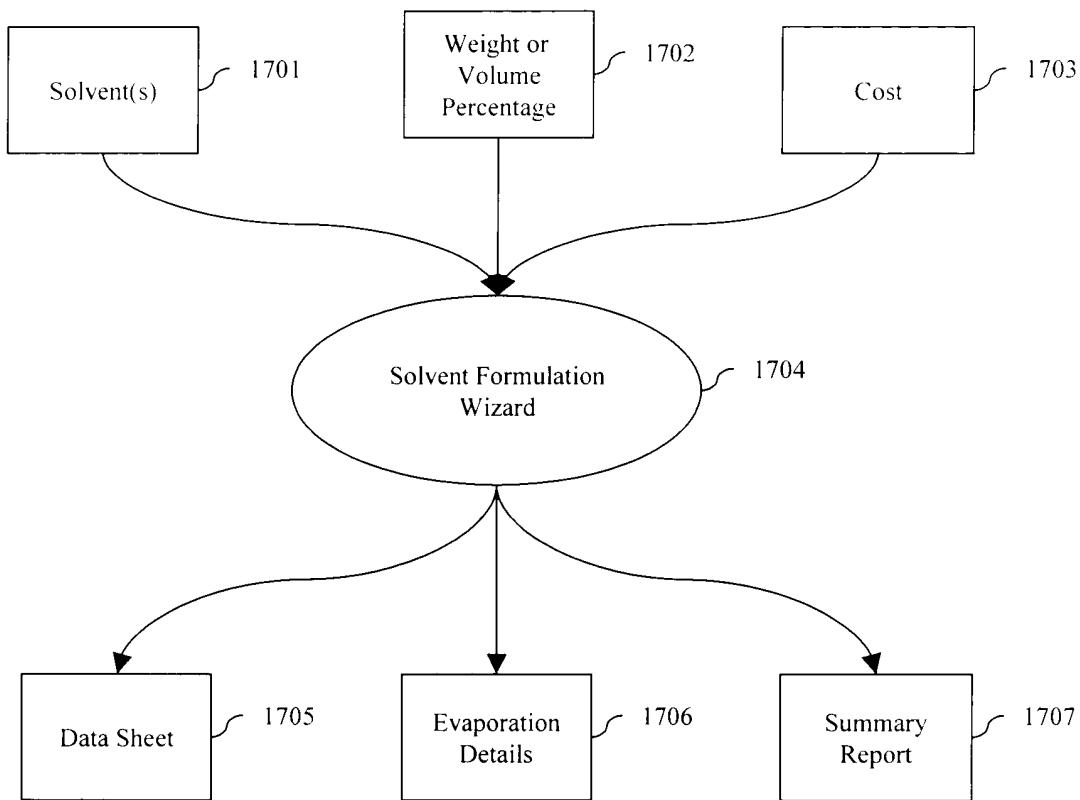


FIG. 17A

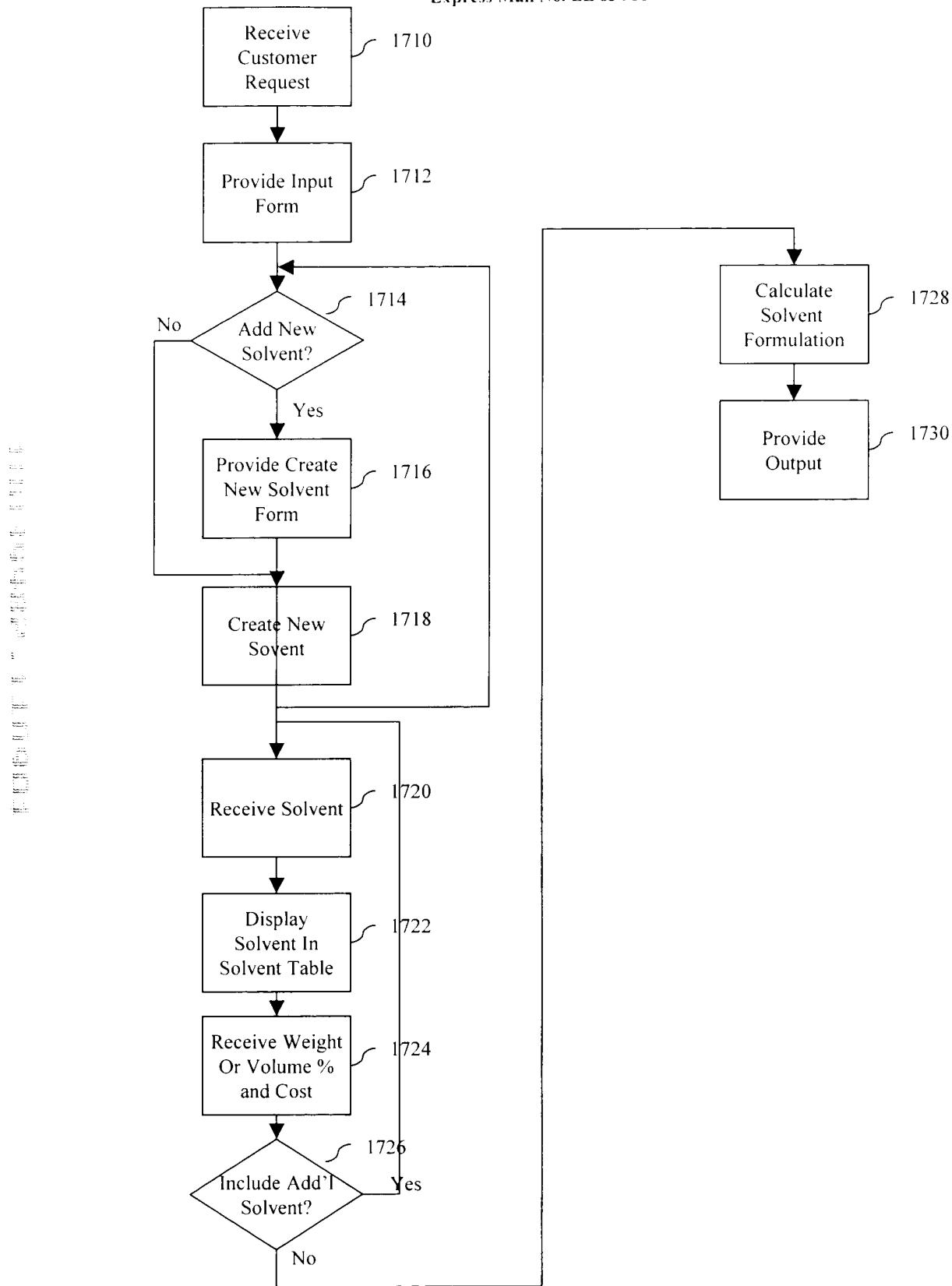


FIG. 17B

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2 Solvent Reformulation - Microsoft Internet Explorer

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Wizard TECHNICAL SOLUTIONS Contact Us Solvent Reformulation How To Use The Wizard Close Window

Solvent Selection

* Required Field 1750

Solvent Group: Esters Hydrogen Bonding: Normal Revised

Solvent Selection: *
 Hold <Shift> Key for multiple selection
 Click here to add Unlisted Solvent
 METHYL ACETATE
 ISOBUTYL ACETATE
 ISOPROPYL ACETATE

1751 1752 1753

Add selected Solvent(s) to table below 1755 1756 1757 1758

Solvent Name: ISOBUTYL ACETATE Weight %: Control Blend Gents per pound:

ISOPROPYL ACETATE Volume %:

Start Projects - Microsoft RE: Corrected... Visual Source... Exploring - D... Microsoft Word Solvent Re... 205 PM

FIG. 17C

2 Solvent Reformulation - Microsoft Internet Explorer

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Address: http://eastmen/Wizards/Test/SolventReformulation/SolAddNewSolvent.asp

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Wizard TECHNICAL SOLUTIONS Contact Us Solvent Reformulation How To Use The Wizard Close Window

Add New Solvent

* Required Field

1760 1761

Solvent Name: * Hansen Values: *

Viscosity: * Dispersion: *

90% Evaporation Time: * Polar: *

secs Density: * Hydrogen Bonding: *

Density: * LBS/Gal

Molecular Weight: *

Flash Point: * Refractive Index: *

Flash Method: * Refractive Temperature: *

Surface Tension: *

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FIG. 17D

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3 Solvent Reformulation - Microsoft Internet Explorer

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Solvent Reformulation

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**Normalized Volume / Weight Datasheet
 (Control Blend)**

Normalized Volume / Weight	Solvent Name	SARA	HAPS	Volume	Weight	Cents/Pound*	Cents/Kilogram*
Weight	METHYL PROPYL KETONE(90%)	Y	N	48.29	48.47	88.00	194.008
Retain Volume / Weight	C-7 KETONE	N	Y	51.71	52.51	50.000	110.232
Simulation Evaporation Profile	ACETONE(99.5%)	N	N	56.48	55.51	43.000	94.799
Escape Coefficient by Type	TOTAL				156.48	156.48	

1775 → 1771

Reformulation Summary

Next Solvent Blend

1772	Physical Properties		Hansen Solubility Parameters	
	1773	1773	1773	1773
	VISCOSITY, cP	0.5	DISPERSION	7.761
SURFACE TENSION @20 C (dynes/cm)	25.6	POLAR	3.908	
REFRACTIVE INDEX @25 C	1.4173	HYDROGEN BONDING	2.598	
		TOTAL HANSEN	9.069	

Notice: TLV values have not been established for 1120 C-7 ketone

Notice: TLV values cannot be calculated for the blend

Threshold Limit Value

MG/CUBIC M 0 } 1774
 ppm 0 }

Done Start Projects SQL Server Exploring Visual Source Microsoft Solvent Re.Rev. Solve Local Internet 3:04 PM

FIG. 17E

2 Solvent Reformulation - Microsoft Internet Explorer

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Address: http://eastman/Wizards/Test/SolventReformulation/SolvDatasheet.asp

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Solvent Reformulation

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**Simulated Evaporation Data
 (Control Blend)**

23-Jul-2001 3:09 PM Eastern Time(GMT-4:00)

Weight % Solvent Composition VS Weight % Evaporated

Solvent Name	10	30	50	70	90
N-BUTYL ACETATE (99.5%)	41.3	45.0	51.1	61.4	84.5
ISOPROPYL ALCOHOL (99%)	28.9	25.9	20.9	12.8	0.2
TOLUNE	29.8	29.1	27.9	25.8	15.3

1776 → 1776

Hansen Solubility Parameters

DISPERSION	8.020	8.014	8.004	7.142	7.734
POLAR	1.607	1.124	1.299	1.966	1.076
HYDROGEN BONDING	4.371	3.382	3.402	3.439	2.603
TOTAL HANSEN	9.160	9.382	8.402	8.439	8.603

1777 → 1777

Simulated Evaporation Profile

100.00
 80.00 } 1778

Threshold Limit Value

MG/CUBIC M 0. }
 ppm 0 }

Start Projects SQL Server Exploring Visual Source Microsoft Solvent Re.Rev. Solve Local Internet 3:04 PM

FIG. 17F

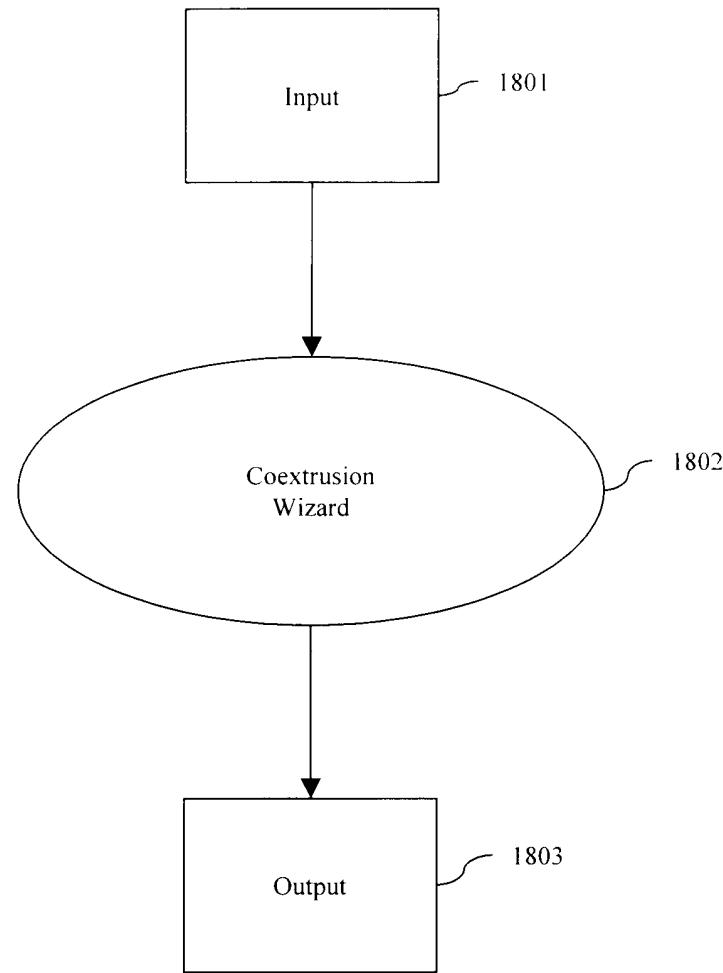


FIG. 18

Compare Search Help

Solvents Selection Criteria

For a list of all solvents select 'All' for each criteria and click Create Report.

Supplier:

All Eastman

Evaporation Rate:

All Fast (≥ 3.0)
 Medium (3.0 - 0.6) Slow (0.6 - 0.12)
 Very Slow (<0.12)

Nitrocellulose Solubility:

All Active
 Latent Diluent

Sort By:

Name Flash Point
 Evaporation Rate

Flash Point:

All Non-Flash ($\geq 60.5^{\circ}\text{C}$ (141°F))
 Flash (<60.5°C (141°F))

Water Solubility:

All Soluble
 InSoluble

HAPS:

All Eastman non-HAPs

Chemical Grade:

All Urethane
 Trace Metals (<10 ppb)

[Create Report](#) [Reset Criteria](#) [Return to e-Solvent Home Page](#)

FIG. 19A

Sort By:

Name Flash Point
 Evaporation Rate

Solvents Report

Selection Criteria: Sorted By Name, Supplier = Eastman, Flash Point = Flash (<60.5°C (141°F)), Evap Rate = Fast (>=3.0), Water = All, Nitrocellulose = All, HAPS = All, Chemical Grade = All

Solvent	Eastman Product?	Evaporation Rate, nBuOAc = 1	Flash Point
<u>FASTMAN Acetone, High Purity Sales Grade</u>	Yes	6.3	-20°C (-4°F)
<u>FASTAPURE Ethyl Acetate</u>	Yes	4.1	-4°C (24°F)
<u>FASTMAN Ethyl Acetate, 85-88%</u>	Yes	4.2	-3°C (27°F)
<u>FASTMAN Ethyl Acetate, Urethane Grade</u>	Yes	4.1	-4°C (24°F)
<u>FASTMAN Isopropyl Acetate</u>	Yes	3	2°C (35°F)
<u>FASTMAN Methyl Acetate</u>	Yes	6.0	-13°C (9°F)
<u>FASTMAN Methyl Acetate</u>	Yes	6.0	-15°C (9°F)
<u>FASTMAN Methyl Acetate</u>	Yes	6.0	-13°C (5°F)
<u>FASTMAN Methyl Acetate</u>	Yes	6.0	-15°C (5°F)

[Return to Selection Page](#)

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FIG. 19B

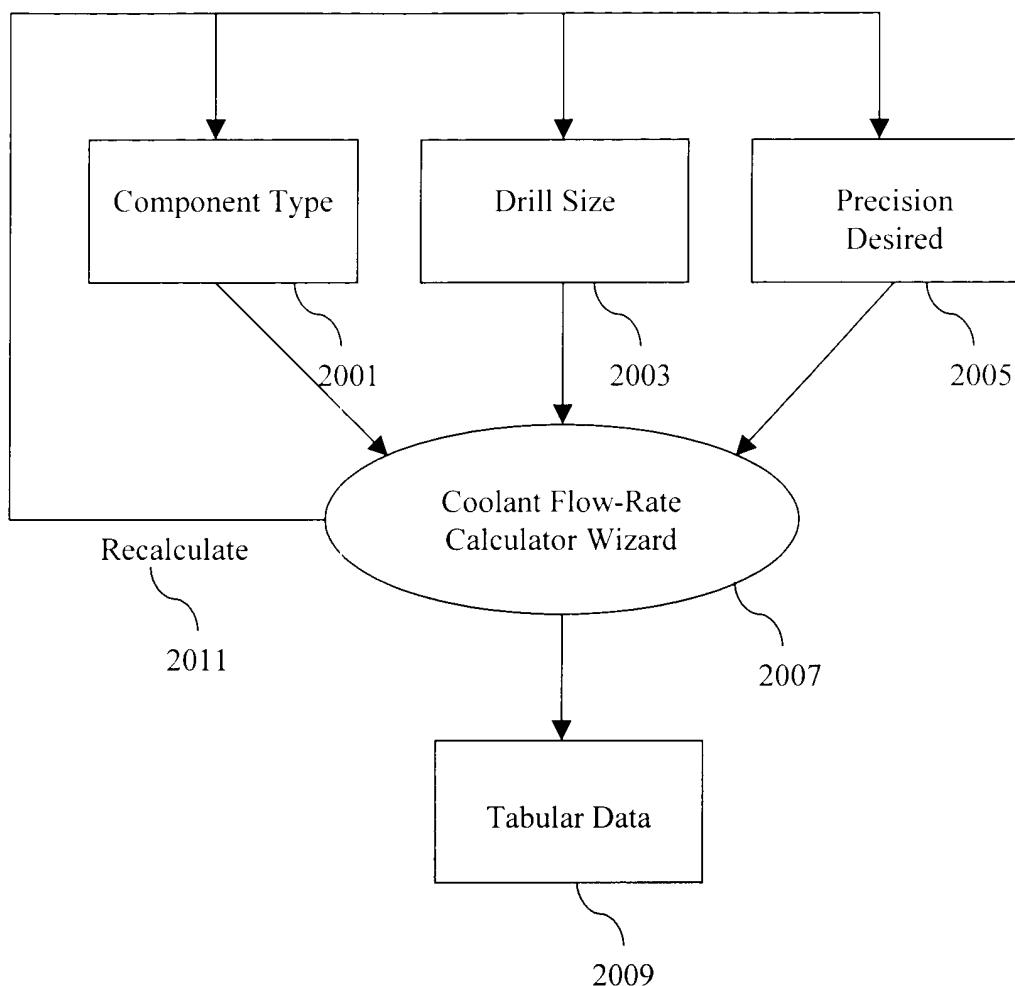


FIGURE 20A

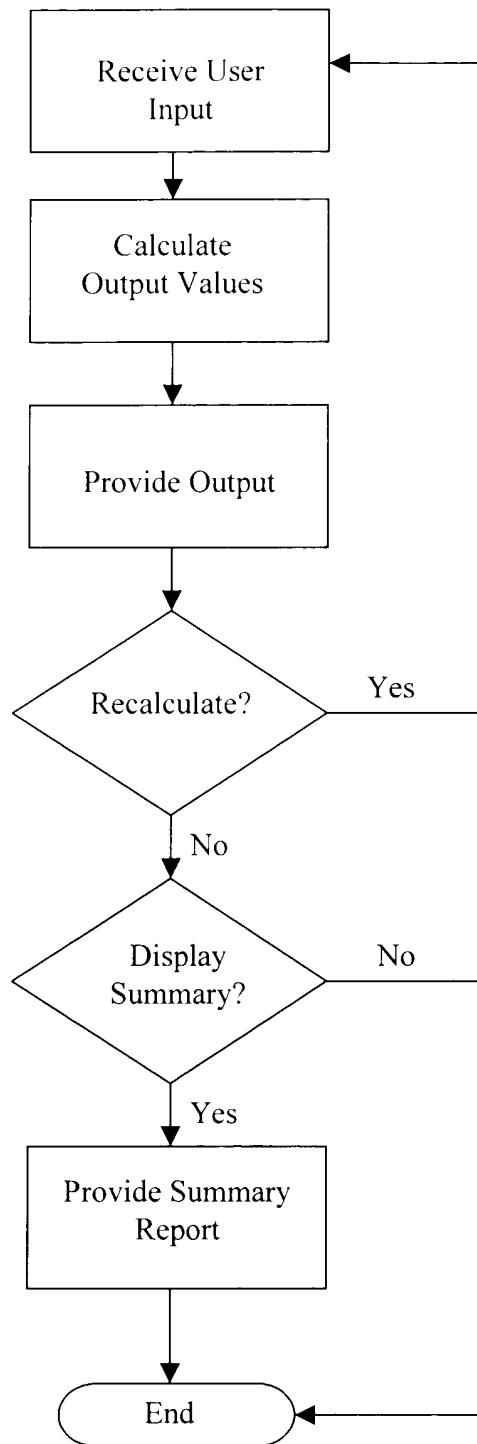


FIGURE 20B

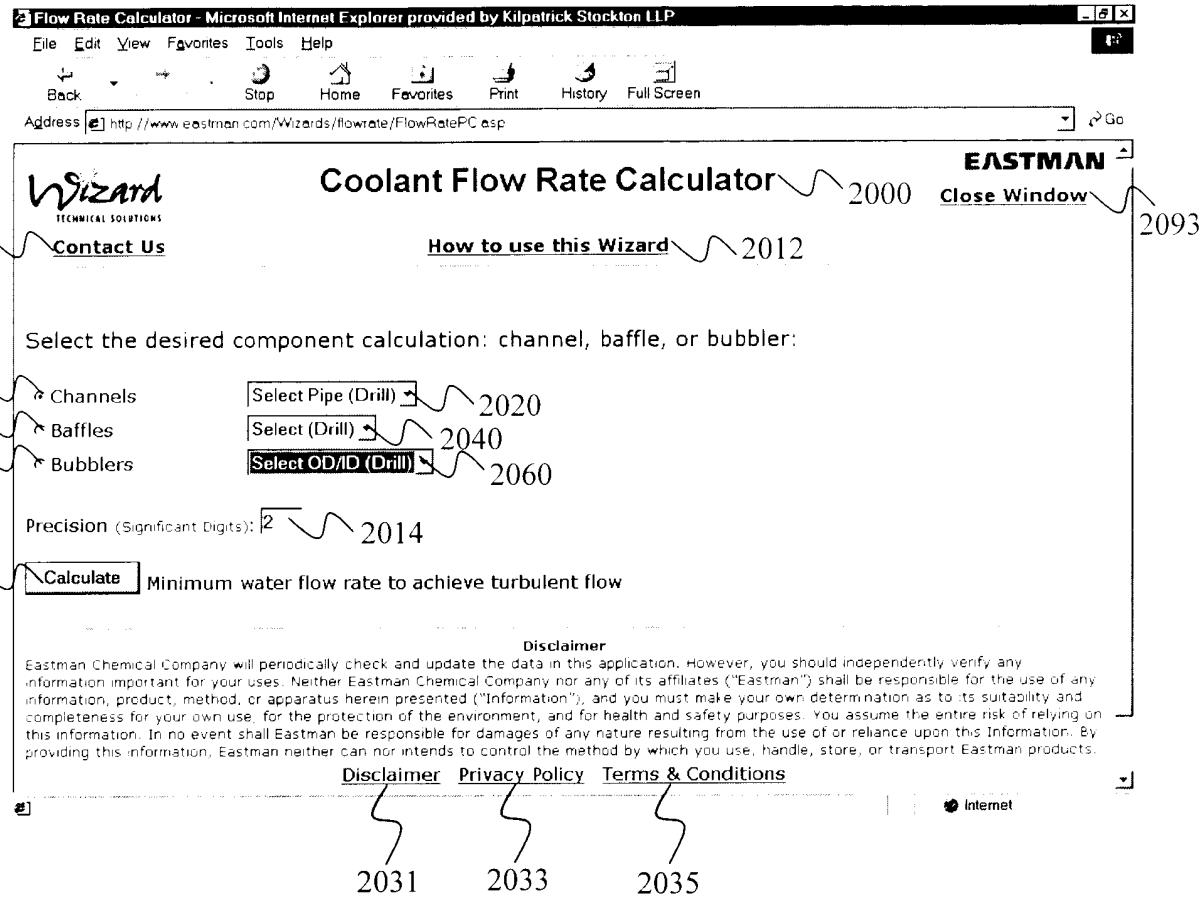


FIGURE 20C

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Flow Rate Calculator - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

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Address: http://www.eastman.com/Wizards/flowrate/FlowRatePC.asp Go

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Coolant Flow Rate Calculator 2000B

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Contact Us **How to use this Wizard** **Printer Friendly Report** 2099

Channel Baffle Bubbler

3/8 (0.578) Select (Drill) Select OD/ID (Drill)

Precision (Significant Digits): 2

ReCalculate

2014 2075B

Minimum water flow rate to achieve turbulent flow 2080

Component = Channel; Selected Value = 3/8 (0.578); Precision = 2

Water Temperature (F)	Minimum Flow Rate (gpm)
40	1.69
50	1.44
60	1.23
70	1.08
80	0.94
90	0.83

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FIGURE 20D

Flow Rate Calculator - Microsoft Internet Explorer provided by Kilpatrick Stockton LLP

Wizard TECHNICAL SOLUTIONS

Coolant Flow Rate Calculator

EASTMAN

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7-Nov-2001 9:58 AM Eastern Time(GMT-5:00)

Minimum water flow rate to achieve turbulent flow

Component = Bubbler; Selected Value = 0.125/0.069 (0.143); Precision = 3

Water Temperature (F)	Minimum Flow Rate (gpm)
40	0.719
50	0.612
60	0.523
70	0.458
80	0.402
90	0.355

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FIGURE 20E